

Thematic Dossier

Environmental Psychology Alignments to SDG in Brazil: Towards Healthy Societies?

Mário Henrique da Mata Martins¹ 

Claudia Marcia Lyra Pato² 

Marlise Aparecida Bassani³ 

Ingrid Luiza Neto⁴ 

Maíra Longhinotti Felipe⁵ 

Fernanda Fernandes Gurgel⁶ 

Rute Grossi Milani⁷ 

Eduarda Lehmann Bannach⁸ 

Alessandra Bianchi⁹ 

Christiana Cabicieri Profice¹⁰ 

Hartmut Günther² 

Ricardo Antonio García-Mira¹¹ 

Abstract: Considering that Brazilian research in Environmental Psychology is largely concentrated within the 50^o Working Group of the National Association for Research and Post-Graduate Studies in Psychology (GT-50), the current study analysed materials and practices produced by its members which were aligned with UN Sustainable Development Goals (SDG) in order to understand their contribution towards healthy societies in Brazil. The authors organized the practices and materials into five thematic sections, analyzed them through a healthy society framework and discussed current and potential contributions towards the framework components: people, places, products, planet. The main findings indicate progress in equity, community spaces, eco-behaviours, and nature-based solutions. Gaps include targeting commercial determinants of environment and health, macro-scaling urban governance barriers, explicit ties to global targets, and scaling individual-level outcomes to systemic policy changes. Methodological limitations are presented towards the choice to focus on GT-50 and theoretical critiques on SDG principles and practices are produced.

Keywords: environmental psychology, social determinants of health, sustainable development

¹Federal University of São Carlos, São Carlos-SP, Brazil.

²University of Brasilia, Brasilia-DF, Brazil.

³Pontifical Catholic University of Sao Paulo, São Paulo-SP, Brazil.

⁴Catholic University of Brasilia, Brasilia-DF, Brazil.

⁵Federal University of Santa Catarina, Florianópolis-SC, Brazil.

⁶Federal University of Rio Grande do Norte, Nata-RN, Brazil.

⁷Cesumar University, Maringá-PR, Brazil.

⁸University of Paris, Gustave Eiffel University, France.

⁹Federal University of Paraná, Curitiba-PR, Brazil.

¹⁰State University of Santa Cruz, Ilhéus-BA, Brazil.

¹¹University of Coruña, Spain.

Correspondence address: Rod. Washington Luís, s/n, Monjolinho, São Carlos (SP), Brazil, CEP 13565-905. E-mail: mario.martins@ufscar.br

Support. Dr. Claudia Marcia Lyra Pato thanks the funding granted by the National Council for Scientific and Technological Development (CNPq), Process: 420524/2022-3. Dr. Hartmut Gunther and Dr. Ingrid Luiza Neto thank the funding granted by the Federal District Research Support Foundation (FAP-DF), project number 44/2015. Dr. Maira Longhinotti Felipe thanks the funding granted by the Institutional Program of Scientific Initiation Scholarships (PIBIC/CNPq), calls Propesq/UFSC 01/2020; 01/2021; 04/2023; e 03/2024. Dr. Rute Grossi Milani thanks the funding granted by Araucaria Foundation (Foundation for Scientific and Technological Development of Paraná State - FA), project number PRD2023361000272 and Cesumar Institute of Science, Technology and Innovation (ICETI). Dr. Ricardo Antonio García-Mira thanks the funding granted by the European Commission (7th Framework Programme n. 613420; Horizon 2020, n. 883947).

Alinhamentos da Psicologia Ambiental aos ODS no Brasil: Caminhando para Sociedades Saudáveis?

Resumo: Considerando que a pesquisa brasileira em Psicologia Ambiental está amplamente concentrada no Grupo de Trabalho 50 da Associação Nacional de Pesquisa e Pós-Graduação em Psicologia (GT-50), este estudo analisou materiais e práticas produzidos por seus membros, alinhados aos Objetivos de Desenvolvimento Sustentável (ODS) da ONU, para compreender sua contribuição para sociedades saudáveis no Brasil. Os autores organizaram as práticas em cinco seções temáticas, analisando-as através de um modelo de sociedade saudável e discutindo contribuições atuais e potenciais para seus componentes: pessoas, lugares, produtos e planeta. Os principais achados mostram avanços em equidade, espaços comunitários, comportamentos ecológicos e soluções baseadas na natureza. Lacunas incluem abordar determinantes comerciais do meio ambiente e da saúde, barreiras macroambientais de governança urbana, vínculos com metas globais e escalonamento de resultados individuais para políticas sistêmicas. Limitações metodológicas são apresentadas quanto à escolha do GT-50 e críticas teóricas dos princípios e práticas dos ODS são produzidas.

Palavras-chave: psicologia ambiental, determinantes sociais da saúde, desenvolvimento sustentável

Alineamientos psicoambientales a los ODS en Brasil: ¿Caminos hacia Sociedades Saludables?

Resumen: Considerando que la investigación brasileña en Psicología Ambiental se concentra principalmente en el Grupo de Trabajo 50 de la Asociación Nacional de Investigación y Posgrado en Psicología (GT-50), este estudio analizó materiales y prácticas producidos por sus miembros, alineados con los Objetivos de Desarrollo Sostenible (ODS) de la ONU, para comprender su contribución a sociedades saludables en Brasil. Los autores organizaron las prácticas en cinco secciones temáticas, analizándolas mediante un marco de sociedad saludable y discutiendo contribuciones actuales y potenciales para sus componentes: personas, lugares, productos y planeta. Los hallazgos muestran avances en equidad, espacios comunitarios, comportamientos ecológicos y soluciones basadas en la naturaleza. Brechas incluyen determinantes comerciales del ambiente y salud, barreras macro de gobernanza urbana, vínculos con objetivos globales y escalar resultados individuales hacia cambios sistémicos. Se presentan limitaciones metodológicas sobre la elección del GT-50 como fuente y críticas teóricas a principios y prácticas de los ODS.

Palabras-clave: psicología ambiental, determinantes sociales de la salud, desarrollo sostenible

This century can almost be called the century of psychology, and the growing acceptance of applying psychological theory to environmental problems in an international research context supports this statement (Inauen et al., 2021). Likewise, there is an interest in building a body of theories which allow us to explore the intricacies of human behaviour, and a desire to know the models that explain the impact it has on many social and environmental issues that are looming over us with climate change (Gifford, 2014). Addressing this in the context of the Sustainable Development Goals of the 2030 Agenda has begun to be a priority for many environmental psychologists (Henderson & Loreau, 2023) and is the main goal of this study.

Environmental Psychology contributes with the UN Sustainable Development Goals (SDG) by understanding the interdependence between human health and environments, informing the design of cities and policies that promote well-being and sustainability (American Psychological Association [APA], 2023). These contributions are the same expected to be developed in what has been called “healthy societies”, a recent field of work focused on prioritising structural and systemic reforms to address health inequities (Buse et al., 2023).

Drawing on 68 purposefully selected documents, including political declarations, commission and agency reports,

peer-reviewed papers and guidance notes, Buse et al. (2023) synthesized a heuristic framework comprising four equity-based core components to define healthy societies: people, places, products, and planet. According to the author, the people component encompasses social positions, interactions, and networks which foster well-being and requires tackling upstream determinants (wealth, housing, discrimination) and strengthening civic engagement. The places component refers to the physical environments where individuals live and work and demands equitable access to healthy environments (housing, workplaces, transport) by addressing spatial inequities. The products component includes commercial goods and practices that impact health and necessitates regulating harmful commodities (tobacco, alcohol) and redistributing commercial power. Finally, the planet component considers human health in relation to environmental systems, requiring shifts from growth-centric paradigms to combat environmental inequities (Buse et al., 2023).

Considering that Brazilian research in Environmental Psychology is largely concentrated within the 50^o Working Group of the National Association for Research and Post-Graduate Studies in Psychology (GT-50), the current study analysed materials and practices produced by its members

which were aligned with UN Sustainable Development Goals (SDG) in order to understand their contribution towards healthy societies in Brazil.

Procedures for theoretical reflections

This article is a theoretical essay aligned with the activities developed by the Environmental Psychology Working Group of the National Association for Research and Post-Graduate Studies in Psychology (GT-Ambiental/ANPEPP). This choice to focus on this group has been motivated by the understanding that it was essential in bringing together graduate professors who shaped the field's direction, strategically planned its expansion, and implemented proposed plans to contribute to the field's consolidation in the country (Moisés, 2023).

The authors selected projects, research initiatives, and teaching practices from their own work and that of their working group colleagues, focusing on two core criteria: direct alignment with United Nations Sustainable Development Goals (SDG) (United Nations, 2024) and relevance to the health promotion field (with particular emphasis on healthy societies). The material was later examined using categorical analysis (Dalla Valle & Ferreira, 2025) to identify recurrent patterns and cluster similarities, thereby establishing thematic categories that facilitate analytical inferences. Thus, these contributions were organized into five interconnected thematic areas addressing critical SDG targets: combating hunger and food insecurity while empowering vulnerable populations; analyzing mental health determinants and care frameworks; tackling urban mobility and transportation challenges; enhancing national and global capacities for early warning and management of health risks; and advancing the development of inclusive, safe, resilient, and sustainable human settlements. Each thematic cluster became a section in the present paper.

Nevertheless, upon achieving this aim, syntheses were developed for each section, highlighting key contributions to the healthy societies framework presented by Buse et al. (2023) - people, place, product, planet. An analytical synthesis for each component is then presented at the end of each section. The authors subsequently selected publications which concisely present vivid illustrations of the key insights achieved in the previous phase to optimize analysis and reduce self-citation frequency in this work (Geampana & Perrota, 2025), while limiting self-citations to a maximum of five. This proved both challenging (given the working group's extensive collaborative nature, which naturally yielded numerous co-authored publications), but also productive (since it enhanced the quality of result discussions and reduced endogenous tendencies).

While not aiming to provide an exhaustive analysis of the subject, this work selectively examines key contributions that demonstrate how Brazilian Environmental Psychology is aligned with sustainable development goals towards healthy societies, explore some gaps and present future recommendations. By highlighting these strategic intersections

rather than attempting comprehensive coverage, the authors show how the field addresses critical challenges central to envisioning healthy societies. Our selection prioritizes works which most clearly articulate this alignment, showcasing the discipline's unique potential to bridge theory, policy, and actionable solutions in the Brazilian context.

Results and discussion

This section presents an integrated analysis of research, teaching practices, and interventions in Environmental Psychology in Brazil. Each subsection explores a set of studies aligned with specific SDG targets, followed by a critical discussion guided by the Buse et al. (2023) framework which structures healthy societies across four interconnected dimensions: people, places, products, and planet.

Promoting food security and women empowerment

The resurgence of food insecurity in Brazil during the COVID-19 pandemic underscores the urgency of securing the fundamental right to sustainable food access (Silva et al., 2024), especially considering gendered populations (Wang et al., 2022). In this regard, this section discusses two Environmental Psychology projects that contribute to the UN's Sustainable Development Goals of eradicating hunger (SDG 2, targets 2.1, 2.3, 2.4) and promoting gender equality (SDG 5, target 5.4). Both projects highlight the integration of sustainable agricultural practices and the empowerment of women in the pursuit of food security towards a healthy society.

The first project is an internship conducted in rural settings. The internship, defined by Brazilian law as a supervised educational activity in the workplace, is a critical component of academic training that contributes to develop students' professional identity (Barros & Almeida, 2019). These internships were conducted in rural semi-arid regions between 2019 and 2024, and focused on family farming, agroecology, and food security, with significant participation from resident women. They took place in diverse settings, including peri-urban farming communities, technical assistance enterprises, civil society organizations, rural health units, and social movements such as the Landless Workers' Movement (*Movimento dos Trabalhadores Rurais Sem Terra - MST*).

One of these internship experiences was conducted in collaboration with an agricultural engineering extension project and involved workshops with female farmers managing Productive Backyards. These initiatives were developed by rural women, and integrate productive work with reproductive, domestic, and caregiving tasks, historically assigned to women as part of social labour division (Beserra et al., 2023)

The workshops highlighted the women's expertise in agroecosystem management, their commitment to resource preservation, and the role of their produce in improving family and community nutrition by providing diverse, healthy, locally sourced foods. This helps address food and nutritional

insecurity and promotes food sovereignty. The workshops were held in participants' homes, emphasized agroecology, health, and empowerment, and engaged in discussions about women's roles in relation to local conditions and their experiences in a patriarchal society (Del Priore, 2007).

On the other hand, the urban extension project integrates sustainable public actions in a vulnerable settlement through a Solidarity Kitchen and a Community Garden. Led by the Homeless Workers Movement (*Movimento dos Trabalhadores Sem-Teto - MTST*), the Solidarity Kitchen provides free, high-quality meals to individuals facing homelessness and food insecurity. The kitchen was established in 2022 in a vulnerable settlement, with a nearby community garden created to supply fresh herbs and vegetables. Initially spanning 100 m² and managed by a skilled female leader, the garden played a crucial role in combating hunger and fostering social cohesion (Santos et al., 2022). Together, these initiatives optimize local resources, enhance food systems, and promote sustainability in an area marked by poverty and food insecurity. By reducing waste and engaging the community, they exemplify effective strategies for addressing immediate needs and building long-term resilience.

Integrating the Solidarity Kitchen with the Community Garden has been crucial for optimizing the local food system and promoting sustainability. This integration reduces transportation needs and greenhouse gas emissions, supports composting practices, and enhances resource management. Also, the project supports gender equity, promotes equal opportunities, and strengthens women's roles in both the local economy and environmental sustainability.

These projects advance healthy societies through distinct yet interconnected pathways. Under the People component, they promote gender equity by elevating women's leadership and empower vulnerable groups to address structural inequalities. Places benefit from enhanced social cohesion and community engagement, strengthening ties within local environments. Contributions for Products include fostering food sovereignty via agroecology and optimizing resource use, directly reshaping harmful production systems. While no explicit Planet-focused outcomes were identified, the emphasis on sustainable local food systems indirectly supports ecological health.

Facing noncommunicable diseases and promoting mental health

The importance of mental health as a basic human right and its centrality to sustainable development (United Nations, 2024) underscores the need for targeted actions within Sustainable Development Goal 3 (SDG 3), particularly target 3.4, which focuses on reducing mortality from non-communicable diseases and promoting mental well-being. This section highlights four Environmental Psychology initiatives aligned with target 3.4, addressing mental health as essential for individual and collective resilience, contributing to healthier societies and advancing the broader 2030 Agenda for sustainable development.

The first study aimed at analysing the symbolic and emotional meanings of users during their activities in gardens. The study used the Affective Map Generator Instrument (Bomfim, 2023) with older adults and the images produced were analyzed from their structures, feelings and senses. The experiences in these environments were mediated by feelings of pleasantness, belonging and psychological restoration. The connection with nature and social interaction stand out among the attributed senses, as previously identified in scientific literature (Henderson et al., 2024). It is concluded that these dimensions present in the studied gardens can contribute to promote mental health, quality of life, sustainability and environmental preservation.

The second study analyzed the university students' perception of the COVID-19 pandemic using the Photovoice, which constitutes a participatory health promotion strategy (Wang, 2006). University students were interviewed to produce photos and their respective reports on living with the pandemic and coping strategies. Anxiety, anguish and fear were highlighted regarding the pandemic and the home office, as well as determination, self-confidence and empathy. The use of natural environments was evident as a coping strategy, as also identified in international literature (Berto, 2014). It is concluded that the participatory health promotion strategy using Photovoice was effective in understanding the university student experience during the pandemic.

The third group of work emphasizes promoting mental health through research on restorative environments and social restoration processes. One goal is to promote restorative urban environments based on participatory community social actions for planning and requalification of green spaces in the city. In this line of action, we have developed and applied a conceptual framework for participatory planning with residents of vulnerable neighbourhoods focusing on requalifying green and communal areas for leisure and community purposes. Thus, it is expected that Technical Assistance in Social Housing can be extended to urban public spaces, aiming at transforming them into a restorative environmental context and contributing to restorative studies (Thwaites et al., 2012).

The fourth group of work refers to teaching practices in Environmental Psychology, which integrate mental health and interdisciplinary approaches to train professionals committed to promoting healthy societies. These classes emphasize the interface between Environmental Psychology and other domains, incorporating cultural dimensions such as spirituality and religiosity to foster sustainability, mental health, and values supporting healthier lifestyles. Curricular topics address societal and scientific demands, covering quality of life, environmental stressors, restorative environments, space appropriation, and climate change (Bassani, 2023). The main theme on climate anxiety in 2024 led to create five booklets to support mental health prevention and promote resilience. The pedagogical experiences fostered a training process committed to a broader understanding of mental health, which directly integrates diverse elements of sustainability and the resources exemplify the commitment to disseminating

scientific knowledge and equipping diverse populations with tools for environmental and mental well-being.

These initiatives foster healthy societies through multiple dimensions. The People component is addressed by empowering populations and elevating affective/behavioral ties to daily contexts, strengthening social agency. Contributions for Places include building urban social identity and place attachment, and adapting interventions to diverse environmental scales/typologies, enhancing stewardship of local environments. The Products component shows limited direct alignment, as the projects focus less on regulating harmful commodities or commercial practices. While no explicit Planet focus exists, prevention-oriented strategies and multi-scalar approaches lay groundwork for ecological integration.

The people-environment relations and the reduction of global road traffic deaths and injuries

More than 30,000 people die every year due to traffic accidents in Brazil. Pedestrians and motorcyclists are highly represented among the fatalities. The high number of traffic-related fatalities and injuries underscores the need for urgent actions to improve road safety, as reflected in the UN's Sustainable Development Goals (SDG 3, target 3.6), which aims to reduce traffic deaths globally by 2030.

The findings regarding transport mode choices closely align with broader societal efforts to promote active mobility, improve road safety, and foster sustainable urban planning. Studies such as those by Bertazzo et al. (2020) highlight the ambivalence and challenges associated with vehicle usage. While cars offer comfort and speed, they contribute to congestion and pollution, creating emotional conflict for users. Similarly, buses provide financial benefits but are often plagued by overcrowding and delays, reducing their attractiveness. These results emphasize the need for sustainable alternatives like active mobility, which aligns with promoting cycling for health, autonomy, and environmental benefits. However, demographic disparities occur in cycling adoption, with younger individuals and men being more inclined to use bicycles. This suggests the necessity for targeted interventions to encourage broader adoption across different population groups (Matsunaga et al., 2024).

On the other hand, the role of barriers in shaping transportation choices is crucial. Studies like Olekszechen et al. (2019) emphasize how inadequate or unsafe infrastructure hinders the adoption of cycling, a key pillar of active mobility. Disconnected or unsafe bicycle paths deter potential users, while well-implemented cycle lanes significantly increase the likelihood of cycling to destinations. There is also a striking gap between adolescents' intentions and actual behaviours, with many aspiring to use bicycles for commuting in the future, but only a small percentage currently do so. This underscores the need for infrastructure development and cultural shifts to bridge this gap and normalize cycling as a primary transport mode.

Risky behaviours on the road influenced by personality traits and urban design further complicate the transportation landscape. Bösehans and Massola (2018) link traits like anger

and overconfidence to violations and errors on the road. These risky behaviours increase the vulnerability of road users and highlight the importance of psychological and educational interventions alongside improved urban planning to enhance traffic safety. By addressing these risks, as well as fostering safer road behaviours, cities can create a more inclusive and sustainable transportation environment, aligning individual choices with broader societal goals of health and safety.

These studies contribute to healthy societies through four interconnected dimensions. They advance equity in the People component by highlighting cycling's benefits for autonomy and health, particularly among vulnerable groups, while examining how psychological traits influence road safety behaviours. They reveal how inadequate urban infrastructure limits active mobility for Places, and how city design shapes risk behaviours, advocating for inclusive planning. The Products dimension is indirectly addressed: promoting cycling implicitly challenges automotive industries, although direct actions against harmful commodities (e.g., fossil fuels) remain absent. In turn, positive environmental impacts of active transport (e.g., emission reductions) are implied for Planet, but unquantified or linked to climate targets.

Strengthening the capacity of all countries, particularly developing countries, for early warning, risk reduction and management of national and global health risks

The interplay between human health, climate change, and the natural environment underscores the urgency of targeted actions aligned with Sustainable Development Goal 3 (SDG 3), particularly target 3d, which emphasizes strengthening global capacities for risk reduction and health management. This section synthesizes insights from 11 studies highlighting Environmental Psychology's contributions to foster health and pro-environmental behaviours, mitigating climate anxiety, and advancing well-being through nature-based strategies.

The COVID-19 pandemic lasted over two years, which exposed the intricate relationship between humans and nature, emphasizing risks tied to climate change and future pandemics. There is consensus on three critical points: climate change is real, human actions contribute to global warming, and individual and collective changes are vital (Steg, 2023).

Educating children to foster ecological values and a sense of belonging to nature is crucial for cultivating global citizens aligned with the SDGs, to reduce climate anxiety, enhance quality of life, and support biodiversity recovery (Hickman et al., 2021). Nature-based activities promote: (a) physical and mental health, offering strategic benefits for public health and environmental conservation policies (Coventry et al., 2021; Gurholt, 2024), and (b) pro-environmental behaviours (Clarke et al., 2021). Also, people with strong biospheric values are more likely to acknowledge climate change as real, human-driven, and impactful, recognizing their own actions' contributions (Steg, 2023).

Considering Buse et al. (2023), these studies support healthy societies through three framework components. The People dimension is advanced by enhancing physical/mental health

through nature connection and educating future generations to mitigate climate anxiety, fostering both individual well-being and social resilience. Contribution for Places underscores green space protection, directly improving access to health-promoting environments. The Products component shows limited direct engagement, as studies focus less on regulating harmful commodities (e.g., deforestation-linked goods) or corporate environmental practices, although biospheric values indirectly challenge unsustainable consumption patterns. The Planet component is robustly addressed through promoting biospheric values and pro-environmental behaviours, which align with ecological preservation and link green spaces to climate resilience.

Making cities and human settlements inclusive, safe, resilient and sustainable

This section presents three studies conducted in the Brazilian context, contributing to promote Sustainable Development Goal 11 (SDG 11, targets 11.2 and 11.3), which aims to create inclusive, safe, resilient, and sustainable cities.

The first study explored the social and psychological determinants of cycling behavior through home interviews with 3,296 citizens (Matsunaga et al., 2024). Using the Theory of Planned Behavior (Ajzen, 1991), the authors found that cycling decisions are usually influenced by social norms, habits, perceived behavioral control, and personal beliefs. However, significant social inequalities emerged: women and older adults are less likely to cycle and less influenced by these psychosocial factors than men and younger participants. This highlights that these groups perceive less social support for engaging in cycling.

These findings align with SDG 11.2 by addressing barriers faced by women and older adults, emphasizing the need for infrastructure improvements and cultural shifts to promote accessible, safe, and sustainable transport systems. Additionally, it contributes to SDG 11.3 by advocating for inclusive urbanization and participatory urban planning. The findings inform public policies that encourage cycling while considering diverse needs, fostering equitable and sustainable urban environments. By addressing these disparities, the study advances efforts to build resilient cities and ensure transportation equity in alignment with global sustainable development objectives.

On the other hand, concerning the effects of the COVID-19 pandemic on mobility behaviours given the importance of social distancing in reducing virus transmission, activities such as commuting to work, visiting friends, leisure outings, and health-related travel decreased. Regarding car users, such as drivers, it was found that they used ridesourcing less often during the pandemic. This indicates that some travel behaviour might remain and can shape sustainable transportation public policies in the future, thus promoting active mobility during and after the pandemic may be an alternative to reduce reliance on motorized transportation (Costa et al., 2022).

This study contributes to SDG 11 by highlighting how encouraging active mobility can reduce air pollution, traffic

congestion, and improve public health. The observed shifts in behaviour underscore the potential of policies which prioritize active and sustainable transport systems to create more resilient cities. Additionally, the study emphasizes ensuring inclusive access to safe, efficient mobility options, particularly for populations with limited public transport access. The study's findings also directly align with the interests of Brazilian psychoenvironmental research, as they focus on socio-environmental behaviours in traffic.

Another study related to SDG 11 is the correlation between offence prevention patterns and the perception of safety in their neighbourhood. Through an environmental design technique known as CPTED (Crime Prevention Through Environmental Design) (Jeffery, 1971), the perception of well-lit streets/public spaces correlates with the perception of safety in walking at night and during the day.

This is in line with SDG 11's goal of promoting safe cities by analysing how modifications to the physical environment can reduce crime and increase residents' perception of safety. Elements such as natural surveillance, access control and space maintenance are emphasised as essential to creating safe and liveable urban areas. The study also highlights the importance of urban design in the perception of safety, which directly affects the quality of life. Implementing good design practices, such as adequate lighting and visibility, improves public safety and the well-being of residents, meeting the SDG 11 goal of providing universal access to safe, inclusive and accessible public spaces. Finally, the study also suggests that community participation and strengthening social ties can contribute to urban security, contributing to protect and safeguard the cultural and natural heritage of the world, which is in line with international production in the field (Usmaedi et al., 2024). By promoting a sense of territoriality and shared responsibility, communities can create safer and more resilient environments.

These studies advance healthy societies through three core components of the framework. The People dimension is addressed by prioritizing inclusive engagement of diverse groups (women, older adults, marginalized communities) and elevating public participation, both critical for fostering social equity and civic responsibility. Contributions for Places include co-designing inclusive transport systems and safe public spaces, and leveraging urban design to prevent health risks, which collectively enhance equitable access to healthy environments. Nevertheless, while this advocates for accessible infrastructure, it further bridges People (vulnerable groups) and Places (spatial justice). The Products component shows limited direct engagement, as interventions focus less on regulating harmful commodities (e.g., fossil fuels) or corporate practices. However, active mobility promotion indirectly challenges car-centric systems. Explicit Planet-level outcomes are absent.

Environmental Psychology and SDG towards healthy societies in Brazil?

The present study addressed how research, interventions, and teaching practices in Environmental Psychology in Brazil contribute to advancing the concept of healthy societies, with

a focus on the UN Sustainable Development Goals (SDG). In this final section, the main contributions of Environmental Psychology are synthesized according to the components of healthy societies, gaps and future steps are presented and theory and method limitations are addressed.

Across all sections in this paper, interventions consistently advanced the People component by addressing structural inequities and fostering agency. Section 1 discussed the promotion of gender equity through women's leadership in food systems, while Section 3 debated how to promote empowered vulnerable groups via cycling accessibility. Section 4 approached strengthening mental health through nature connection, and Section 5 how to prioritize participatory engagement of marginalized communities. Notably, Section 2 highlighted affective ties to daily environments as drivers of social well-being. These efforts collectively targeted upstream determinants, although gaps persist in scaling individual-level outcomes to systemic policy changes.

The Places component was reinforced through spatial justice initiatives. Sections 1 and 2 discussed the enhancement of community stewardship of local environments. Sections 3 and 5 critiqued infrastructure inequities, advocating for inclusive transport systems and safer public spaces. Section 4's focus on green space protection exemplified equitable access to health-promoting environments. While all sections addressed Places, fewer directly tackled macro-scale urban governance barriers (e.g., zoning policies), constituting a future gap for exploration.

Contributions to Products were limited, but emerging. Section 1's agroecology model indirectly challenged industrial food systems, while Section 3's cycling advocacy contested automotive dominance. Sections 2 and 4 emphasized behavioral shifts (e.g., biospheric values) over corporate regulation. No section explicitly addressed harmful commodity production (e.g., fossil fuels), revealing a critical gap in targeting commercial determinants of health.

Ecological health, derived from the Planet component, was most robust in Section 4, linking green spaces to climate resilience. Sections 1 and 3 implied benefits (e.g., emission reductions from cycling, sustainable food systems) but lacked metrics. Sections 2 and 5's prevention-oriented approaches laid groundwork for planetary integration, but required explicit ties to global targets (e.g., carbon neutrality). Cross-cutting nature-based solutions (Sections 1, 4) offer pathways to bridge this gap.

While we have analyzed these components separately, it is crucial to emphasize their interconnected and mutually reinforcing nature within a multilevel governance framework. As demonstrated throughout the analysis, studies frequently contribute to multiple components of healthy societies simultaneously and foster inclusive, multilevel collaboration. It contributes to international studies which defend that by integrating diverse stakeholders and encouraging participatory mechanisms and co-creation processes, Environmental Psychology corroborates to amplify the voices of local, regional, and global actors, ensuring that different perspectives, knowledge, and expertise converge into policy coherence (García-Mira et al., 2024).

However, significant gaps remain which limit the field's broader impact. While environmental psychology excels at understanding local behaviours and community-level interventions, it has been less effective at addressing larger structural barriers. The commercial determinants of health, particularly the influence of industries that promote unsustainable products and practices, have received insufficient attention. Similarly, while many studies imply ecological benefits through behavior change, few quantify these impacts in terms of concrete climate or biodiversity metrics.

Future research directions should focus on three key areas to maximize the field's contribution. First, there is a need for more critical engagement with corporate influences on environmental behaviours and policies. This includes examining how industries shape consumption patterns and policy environments that either enable or hinder sustainability. Second, researchers should develop robust methodologies for measuring the ecological impacts of behavior change interventions, particularly their contributions to carbon reduction and ecosystem preservation. The field would benefit from stronger integration with political and economic frameworks to better understand and address power imbalances in environmental decision-making.

Critical reflection is warranted regarding the implications of adopting the Environmental Psychology Working Group as the main reference to such study and the SDG as part of our foundational framework. Although its selective inclusion of in-group scholarship ensures depth, it may introduce sampling bias and epistemic insularity. Moreover, even though the thematic organization is analytically useful, it may oversimplify systemic interconnections between issues like urban mobility and spatial justice. Finally, the prioritization of specific SDG alignments may marginalize alternative paradigms, and the Brazilian focus limits cross-regional generalizability. These constraints highlight needs for future studies to: 1) broader source diversity, 2) finer-grained frameworks for intersectional analysis, and 3) critical engagement with SDG operationalization challenges, particularly in balancing local specificity with global sustainability metrics.

Finally, despite the aspirational language of the SDGs, they fail to address systemic inequalities and exploitative structures that perpetuate health and environmental crises, as evidenced by UN (2024) reports showing that none will be fully achieved by 2030. The G20 Brasil (2024) notes only 17% of targets are on track, with many stagnating, evidencing a symptom of the framework's compensatory, non-transformative approach. Goal 17's rhetoric of integration lacks actionable connectivity among targets, reinforcing siloed efforts that ignore root causes.

In conclusion, this study analyzed how Environmental Psychology in Brazil contributes to healthy societies within the SDG framework, examining the People, Places, Products, and Planet components. While it highlights strengths such as promoting equity, mental health, and ecological resilience, it reveals gaps in addressing corporate influences, policy barriers, and systemic inequalities. The interconnected nature of these dimensions calls for more holistic, multilevel approaches.

However, limitations include localized frameworks, insufficient ecological metrics, and the SDG's compensatory rather than transformative nature. Future research should integrate political-economic analyses, quantify sustainability impacts, and adopt global perspectives to drive structural change. By bridging theory and practice, this work advances critical discussions on Environmental Psychology's role in fostering equitable and sustainable societies.

Data Availability

The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- American Psychological Association. (2023). *Psychological contributions to achieving the sustainable development goals*. <https://www.apa.org/international/united-nations/contributions-sustainable-development-goals>
- Barros, A. S., & Almeida, M. B. F. (2019). Estágio básico em contextos comunitários: Momento prático na formação em Psicologia Social Comunitária [*Basic internship in community environments: Real practice to building knowledge in Social Community Psychology studies*]. *Revista Pesquisas e Práticas Psicossociais*, 14(3), 1-14. www.seer.ufsj.edu.br/revista_ppp/article/view/e3370
- Bassani, M. A. (2023). Natureza no estilo de vida: Perspectivas da psicologia ambiental para as práticas clínicas contemporâneas [Nature in lifestyle: Perspectives from environmental psychology to contemporary clinical practices]. In M. A. Bassani (Org.), *Clínica psicológica contemporânea: A natureza em perspectiva* [Contemporary psychological clinic: Nature in perspective] [pp. 21-32]. EDUC. <https://repositorio.pucsp.br/jspui/handle/handle/40678>
- Bertazzo, A. B. S., Jacques, M. A. P., & Neto, I. L. (2020). Beliefs underlying modal choice in school trips: A case study in Brazil. *Transportation Research Part F: Traffic Psychology and Behaviour*, 69, 187-205. <https://doi.org/10.1016/j.trf.2020.01.008>
- Berto, R. (2014). The role of nature in coping with psychophysiological stress: A literature review on restorativeness. *Behavioral Sciences*, 4(4), 394-409. <https://doi.org/10.3390/bs4040394>
- Beserra, L., Hennington, É. A., & Pignatti, M. G. (2023). Work and health conditions of women rural workers: An integrative review. *Saúde em Debate*, 47(137), 298-315. <https://www.scielo.br/j/sdeb/a/ktFYbxPjbVGBVCbvhzw6pcR/?format=pdf&lang=en>
- Bomfim, Z. A. C. (2023). *Cidade e afetividade: Estima e construção dos mapas afetivos de Barcelona e São Paulo* [City and affectivity: Esteem and construction of affective maps of Barcelona and São Paulo]. Imprensa Universitária.
- Bösehans, G., & Massola, G. M. (2018). Commuter cyclists' risk perceptions and behaviour in the city of São Paulo. *Transportation Research Part F: Traffic Psychology and Behaviour*, 58, 414-430. <https://doi.org/10.1016/j.trf.2018.06.029>
- Buse, K., Bestman, A., Srivastava, S., Marten, R., Yangchen, S., & Nambiar, D. (2023). What are healthy societies? A thematic analysis of relevant conceptual frameworks. *International Journal of Health Policy and Management*, 12(1), 1-12. <https://doi.org/10.34172/ijhpm.2023.7450>
- Costa, C. S., Pitombo, C. S., & Souza, F. L. U. (2022). Travel behavior before and during the COVID-19 pandemic in Brazil: Mobility changes and transport policies for a sustainable transportation system in the post-pandemic period. *Sustainability*, 14(8), 4573. <https://doi.org/10.3390/su14084573>
- Coventry, P. A., Brown, J. V. E., Pervin, J., Brabyn, S., Pateman, R., Breedvelt, J., Gilbody, S., Stancliffe, R., McEachan, R., & White, P. C. L. (2021). Nature-based outdoor activities for mental and physical health: Systematic review and meta-analysis. *SSM - Population Health*, 16, 100934. <https://doi.org/10.1016/j.ssmph.2021.100934>
- Clarke, F. J., Kotera, Y., & McEwan, K. (2021). A qualitative study comparing mindfulness and shinrin-yoku (forest bathing): Practitioners' perspectives. *Sustainability*, 13(12), 6761. <https://doi.org/10.3390/su13126761>
- Dalla Valle, P. R., & Ferreira, J. L. (2025). Análise de conteúdo na perspectiva de Bardin: Contribuições e limitações para a pesquisa qualitativa em educação [Content analysis in the perspective of Bardin: Contributions and limitations to qualitative research in education]. *Educação em Revista*, 41, e49377. <https://doi.org/10.1590/0102-469849377>
- Del Priore, M. (Org.). (2007). *História das mulheres no Brasil* [History of women in Brazil]. Unesp.
- García-Mira, R., Garha, N. S., Michas, S., Mey, F., Basu, S., & Süsler, D. (2024). Leave no one behind: Engaging communities in the just transition process towards climate neutrality. In E. Galende-Sánchez, A. H. Sorman, V. Cabello, S. Heidenreich, & C. A. Klöckner (Eds.), *Strengthening European climate policy: Governance recommendations from innovative interdisciplinary collaborations* (pp. 87-98). Palgrave Macmillan.
- Geampana, A., & Perrotta, M. (2025). Using interview excerpts to facilitate focus group discussion. *Qualitative Research*, 25(1), 130-146. <https://doi.org/10.1177/14687941241234283>
- Gurholt, K. P. (2024). Governance of nature-based health promotion: Public policy and volunteer organisations' innovations of outdoor activities among urban youth. *Sport, Education and Society*, 29(7), 862-875. <https://doi.org/10.1080/13573322.2023.2209105>



- Gifford, R. (2014). Environmental psychology matters. *Annual Review of Psychology*, 65, 541–579. <https://doi.org/10.1146/annurev-psych-010213-115048>
- G20 Brasil. (2024). *Declaração de líderes do Rio de Janeiro* [Rio de Janeiro Leaders' Declaration]. https://www.gov.br/mre/pt-br/canais_atendimento/imprensa/notas-a-imprensa/g20-declaracao-de-lideres-do-rio-de-janeiro-18-e-19-de-novembro-de-2024/g20-rio-de-janeiro-leaders-declaration-pt.pdf
- Henderson, K., & Loreau, M. (2023). A model of sustainable development goals: Challenges and opportunities in promoting human well-being and environmental sustainability. *Ecological Modelling*, 475, 110164. <https://doi.org/10.1016/j.ecolmodel.2022.110164>
- Henderson, L., Tipper, L., Willicombe, S., & Gattis, M. (2024). Shared time in nature increases feelings of social connection amongst university students. *Journal of Environmental Psychology*, 96, 102343. <https://doi.org/10.1016/j.jenvp.2024.102343>
- Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R. E., Mayall, E. E., Wray, B., Mellor, C. & van Susteren, L. (2021). Climate anxiety in children and young people and their beliefs about government responses to climate change: A global survey. *The Lancet Planetary Health*, 5(12), e863–e873. [https://doi.org/10.1016/S2542-5196\(21\)00278-3](https://doi.org/10.1016/S2542-5196(21)00278-3)
- Inauen, J., Contzen, N., Frick, V., Kadel, P., Keller, J., Kollmann, J., Mata, J., & van Valkengoed, A. M. (2021). Environmental issues are health issues: Making a case and setting an agenda for Environmental Health Psychology. *European Psychologist*, 26(3), 219–229. <https://doi.org/10.1027/1016-9040/a000438>
- Jeffery, C. R. (1971). Crime prevention through environmental design. *American Behavioral Scientist*, 14(4), 598. <https://doi.org/10.1177/000276427101400409>
- Matsunaga, L. H., Goulart, F. M., Machado, C. C., Neto, I. L., & Günther, H. (2024). Residential strategies patterns to offense prevention: A study in Vila Planalto, Brazil. *Revista Ciência & Polícia*, 10(2), 103-124. <https://doi.org/10.59633/2316-8765.2024.327>
- Moisés, J. B. (2023). *Psicologia ambiental no Brasil: Uma análise da produção do Grupo de Trabalhos da ANPEPP (2000-2020)* [Environmental psychology in Brazil: An analysis of the production of The ANPEPP Work Grupo (2000-2020)] [Dissertação de mestrado não publicada]. Universidade Federal do Rio Grande do Norte. <https://repositorio.ufrn.br/handle/123456789/60337>
- Olekszechen, N., Massola, G. M., & Kuhnen, A. (2019). Mobilidade urbana e cognição ambiental de ciclistas [Urban mobility and environmental cognition of cyclists]. *Psicologia em Estudo*, 24, e40502. <https://doi.org/10.4025/psicoestud.v24i0.40502>
- Santos, M. A., Bonaci, W. D. B. S., & Foganholo, L. S. (2022). Horta comunitária e Psicologia Social: Um relato de experiência [Community garden and social psychology: An experience report]. *Fractal: Revista de Psicologia*, 34, e29430. <https://doi.org/10.22409/1984-0292/2022/v34/29430>
- Silva, A. S. C. P., Furtado, L. A. C., Mendes, V. M., & Chioro, A. (2024). O combate à fome na pandemia de COVID-19: Arranjos de cuidado em saúde mental em uma periferia paulistana [The battle against hunger during the COVID-19 pandemic: Mental health arrangements in a favela at São Paulo]. *Saúde em Debate*, 48(141), e8694. <https://doi.org/10.1590/2358-289820241418694P>
- Steg, L. (2023). Psychology of climate change. *Annual Review of Psychology*, 74, 391-421. <https://doi.org/10.1146/annurev-psych-032720-042905>
- Thwaites, K., Simkins, I., & Mathers, A. (2012). Towards socially restorative urbanism: Exploring social and spatial implications for urban restorative experience. *Landscape Review*, 13(2), 26–39. <https://doi.org/10.34900/lr.v13i2.676>
- United Nations. (2024). *The sustainable development goals report 2024*. Department of Economic and Social Affairs. <https://unstats.un.org/sdgs/report/2024/>
- Usmaedi, Lansiw, M. A., Studyanto, A. B., Gymnastiar, I. A., & Amin, F. (2024). Cultural heritage preservation through community engagement: A new paradigm for social sustainability. *Indonesian Journal of Studies on Humanities, Social Sciences and Education*, 1(2), 50-59. <https://doi.org/10.54783/cv5q0011>
- Wang, C. C. (2006). Youth participation in photovoice as a strategy for community change. *Journal of Community Practice*, 14(1-2), 147-161. https://doi.org/10.1300/J125v14n01_09
- Wang, J., Ding, X., Gao, H., & Fan, S. (2022). Reshaping food policy and governance to incentivize and empower disadvantaged groups for improving nutrition. *Nutrients*, 14(3), 648. <https://doi.org/10.3390/nu14030648>

Mário Henrique da Mata Martins is a Professor in the Department of Psychology of the Federal University of São Carlos.

Claudia Marcia Lyra Pato is a Full professor in the Education Faculty of the University of Brasilia.

Marlise Aparecida Bassani is a Full professor in the Human Sciences and Health Faculty of the Pontifical Catholic University of São Paulo.

Ingrid Luiza Neto is a Professor in the master's and doctorate program in Psychology at the Catholic University of Brasília.



Maira Longhinotti Felipe is a Professor in the Department of Architecture and Urbanism of the Federal University of Santa Catarina, Brazil.

Fernanda Fernandes Gurgel is a Professor in the Trairi Faculty of Health Sciences of the Federal University of Rio Grande do Norte, Santa Cruz-RN.

Rute Grossi Milani is a Full Professor in the Graduate Program in Health Promotion of Cesumar University.

Eduarda Lehmann Bannach is an Assistant Professor at the Department of Psychology of the Université Paris Cité.

Alessandra Bianchi is a Full professor at the Federal University of Paraná.

Christiana Cabicieri Profice is a Professor in the Department of Philosophy and Human Sciences of the State University of Santa Cruz.

Hartmut Günther is a Professor Emeritus at the University of Brasília.

Ricardo Antonio García-Mira is a Professor of the Institute for Policy Research at University of Bath.

Authors' Contribution:

All authors made substantial contributions to the conception and design of this study, to data analysis and interpretation, and to the manuscript revision and approval of the final version. All the authors assume public responsibility for the content of the manuscript.

Associate editor:

Vanessa Barbosa Romera Leme

Received: Feb. 26, 2025

1st Revision: Jun. 13, 2025

Approved: Jun. 16, 2025

How to cite this article:

Martins, M. H. M., Pato, C. M. L., Bassani, M. A., Neto, I. L., Felipe, M. L., Gurgel, F. F., Milani, R. G., Bannach, E. L., Bianchi, A., Profice, C. C., Günther, H., & García-Mira, R. A. (2025). Environmental Psychology Alignments to SDG in Brazil: Towards Healthy Societies? *Paidéia (Ribeirão Preto)*, 35, e3533. <https://doi.org/10.1590/1982-4327e3533>