

**ROOTING HUMAN RELATIONSHIPS: MENTAL HEALTH, OCCUPATIONAL
THERAPY, AND THE NATURE-BASED PRACTICES**

**ENRAIZANDO AS RELAÇÕES HUMANAS: SAÚDE MENTAL, TERAPIA
OCUPACIONAL E AS PRÁTICAS BASEADAS NA NATUREZA**

**FOMENTAR LAS RELACIONES HUMANAS: SALUD MENTAL, TERAPIA
OCUPACIONAL Y PRÁCTICAS BASADAS EN LA NATURALEZA**

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ABSTRACT

The relationship between humans and nature is the subject of numerous disciplines, perspectives, and worldviews, in which their interdependence is recognized. That is, human actions can exploit, alter, and devastate nature, just as the consequences of neglecting nature can jeopardize living conditions and human activities. The United Nations Environment Programme (UNEP) and the World Health Organization have pointed out that the planetary crisis of climate change impacts mental health due to economic and social losses, profoundly and enduringly affecting people's well-being. The article proposed a dialogue between nature-based practices and Occupational Therapy, aiming to promote mental health by reconnecting people with nature and strengthening social relationships. The review results indicate that activities such as community gardening can improve the mental health of individuals experiencing stress, anxiety, and depression; interaction with nature and collaborative work can reduce the effects of social isolation, strengthening bonds and providing a sense of belonging and recognition, which are essential for psychological well-being. Occupational Therapy from an ecosocial perspective has strategically focused on the intersection of health, environment, and social inclusion, contributing to interventions that address unique needs and stimulate social and environmental changes, promoting resilient and inclusive communities. The university extension projects developed at Unifesp show promise for promoting mental health in an inseparable manner from social cohesion, inclusion, and sustainability.

Keywords: Mental Health. Occupational Therapy. Nature-Based Practices

RESUMO

A relação entre seres humanos e natureza é objeto de inúmeras disciplinas, perspectivas e cosmovisões, nas quais se reconhece sua interdependência, ou seja, a ação humana pode explorar, alterar e devastar a natureza, bem como as consequências da desproteção da natureza podem colocar em risco as condições de vida e os fazeres humanos. O Programa das Nações Unidas para o Meio Ambiente (PNUMA) e a Organização Mundial de Saúde vêm apontando que a crise planetária da mudança climática impacta a saúde mental, devido às perdas econômicas e sociais, repercutindo de modo forte e duradouro o bem-estar das

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peessoas. O artigo propôs o diálogo entre as práticas baseadas na natureza e a Terapia Ocupacional visando a promoção da saúde mental, ao reconectar as pessoas com a natureza e fortalecer as relações sociais. Os resultados da revisão indicam que atividades como jardinagem comunitária podem melhorar a saúde mental de pessoas com estresse, ansiedade e depressão; a interação com a natureza e o trabalho colaborativo podem reduzir os efeitos do isolamento social, fortalecendo vínculos e proporcionando senso de pertencimento e reconhecimento, essenciais para o bem-estar psicológico. A Terapia Ocupacional de perspectiva ecossocial tem nucleado de forma estratégica a articulação entre saúde, meio ambiente e inclusão social, contribuindo para intervenções que abordam necessidades singulares e estimulam mudanças sociais e ambientais, promovendo comunidades resilientes e inclusivas. Os projetos de extensão universitária desenvolvidos na Unifesp se apresentam promissoras para a promoção da saúde mental, de modo indissociável à coesão social, inclusão e sustentabilidade.

Palavras-chave: Saúde Mental. Terapia Ocupacional. Práticas Baseadas na Natureza.

RESUMEN

La relación entre los seres humanos y la naturaleza es objeto de innumerables disciplinas, perspectivas y cosmovisiones, que reconocen su interdependencia, es decir, que la acción humana puede explotar, alterar y devastar la naturaleza, y las consecuencias de no protegerla pueden poner en peligro las condiciones de vida y las actividades humanas. El Programa de las Naciones Unidas para el Medio Ambiente (PNUMA) y la Organización Mundial de la Salud han señalado que la crisis planetaria del cambio climático repercute en la salud mental, debido a las pérdidas económicas y sociales, con fuertes y duraderas repercusiones en el bienestar de las personas. El artículo propone un diálogo entre las prácticas basadas en la naturaleza y la Terapia Ocupacional con el objetivo de promover la salud mental reconectando a las personas con la naturaleza y fortaleciendo las relaciones sociales. Los resultados de la revisión indican que actividades como la jardinería comunitaria pueden mejorar la salud mental de las personas con estrés, ansiedad y depresión; la interacción con la naturaleza y el trabajo colaborativo pueden reducir los efectos del aislamiento social, fortaleciendo los vínculos y proporcionando un sentido de pertenencia y reconocimiento, esenciales para el bienestar psicológico. La Terapia Ocupacional desde una perspectiva ecosocial se ha centrado estratégicamente en vincular la salud, el medio ambiente y la inclusión social, contribuyendo a intervenciones que abordan necesidades únicas y estimulan el cambio social y medioambiental, promoviendo comunidades resilientes e inclusivas. Los proyectos de extensión universitaria desarrollados en Unifesp resultan prometedores para promover la salud mental, de un modo inextricablemente ligado a la cohesión social, la inclusión y la sostenibilidad.

Palabras clave: Salud mental. Terapia Ocupacional. Prácticas Basadas en la Naturaleza.

1 INTRODUCTION

The relationship between human beings and nature includes numerous perspectives and worldviews, in which their interdependence is recognized. Human action can exploit, alter and devastate nature, as well as the consequences of the lack of protection of nature can put at risk living conditions and human actions. On the other hand, human life understood as part of nature may also be able to manage nature in an integrated way, impacting the repercussions that climate crises may have, in order to protect their own existence.

The United Nations Environment Program and the World Health Organization have been pointing out that the planetary crisis of climate change affects humans, animals, plants and ecosystems, precisely because of their connection and interdependence and can impact mental health, due to economic and social losses, with a strong and lasting impact on people's well-being (IPCC, 2022).

The World Federation of Occupational Therapists recognizes the interconnections between climate change, global health, and sustainable development, proposing that economic, social, and environmental agendas must be addressed to meet the current needs of the world's population without compromising the capacity of future generations. To this end, the challenge for professionals would be to enable human development while promoting environmentally sustainable well-being, offering new opportunities to realign the practice of occupational therapy with global issues (WFOT, 2017).

We recognize the potential for articulation between mental health and the environmental issue, investing in the dissemination and promotion of knowledge for professional training aligned with the objectives of environmental sustainability and well-being. The objective of this article was to analyze the contributions of nature-based practices to the strengthening of human relationships and the promotion of mental health in occupational therapy.

Methodology

A qualitative narrative review of the literature (Brum et al., 2015) was carried out, which sought to answer the research question: "How can permaculture and other perspectives contribute to the rescue of human relationships and the promotion of mental health in occupational therapy?". The PubMed, Web of Science and CAPES Periodicals databases were used, covering the scientific production of the last 10 years, articles published specifically in Occupational Therapy journals. The initial search resulted in 70 articles, of which 20 were excluded due to duplicity and 39 were discarded because they were not

publications in journals in the area of Occupational Therapy, including communications, editorials, research reports, theses and dissertations. Eleven articles were selected, from which a descriptive and critical analysis was carried out. The discussion of the results was articulated with the report of university extension experiences that have addressed permaculture and other nature-based practices in professional training.

2 FINDINGS

The organization of the findings will be presented in order to understand the conceptions about the relationships between nature, culture and health, the main nature-based mental health interventions that have been used by occupational therapists and their results. Subsequently, interprofessional university extension projects that have been developed by occupational therapists will be presented briefly.

The interdependence between nature and culture is a central theme in socioecology, which examines the interactions between social and ecological systems. The growing human impact on the environment, evidenced by deforestation and disorderly urbanization, has generated ecological imbalances that affect both biodiversity and mental health (Mansilla, 2023). The disconnection of individuals with nature contributes to the increase in mental disorders, especially in urban contexts, reinforcing the need for integrated approaches between health and the environment. Socioecology is essential to revitalize this connection, especially in Occupational Therapy, which can promote social inclusion and well-being through eco-social activities. The distancing from natural spaces has generated exclusion and challenges to mental health, making it necessary to rethink practices that integrate people with the environment and the community (Mansilla, 2023).

Permaculture is a holistic approach that integrates sustainable practices with mental and physical health. In addition to facing contemporary challenges, it promotes social inclusion and healthy eating. Community gardens increase access to fresh food and encourage balanced eating habits, preventing chronic diseases. Permaculture projects often involve marginalized groups, strengthening self-esteem and reducing social isolation, benefiting mental health (Folke et al., 2007).

As a sustainable design practice, permaculture combines ecological agriculture and community well-being, benefiting both the environment and people. Interaction with nature reduces stress, anxiety, and depression, while practical activities strengthen support networks essential to psychological well-being (Albrecht, 2010). Despite the benefits,

permaculture still lacks greater recognition in public health policies. The inclusion of these practices in mental health programs can amplify their impact. (Olmos-Martínez & Ortega-Rubio, 2020).

Gregg et al. (2015) who address the use of the Kawa River model as a guide. The main components of the Kawa River Model are represented by metaphorical elements that describe different aspects of human life and well-being.

The Kawa River symbolizes the flow of life and the person's overall state of health and well-being. A flowing and wide river reflects healthy living, while obstructions or narrowings indicate the presence of challenges or problems. Water, or Mizu, represents the flow of life energy, corresponding to the activities and occupations that sustain a person's functionality and vitality. The quality and quantity of water directly reflect the general state of life. The rocks, or Iwa, symbolize the obstacles and challenges that a person faces, such as illness, trauma, or social difficulties, which can block the flow of the river and harm life. The banks of the river, known as Kawa no Soku-heki, represent the social and physical environments that shape a person's existence. These elements can both support and create limitations, depending on their configuration and quality. The trunks and branches, or Ryuboku, represent available resources or supporting factors, such as family, friends, or personal skills. These elements can float and help unclog the flow, but in some circumstances, they can also become obstacles.

Finally, the space between the elements, called Sukima, refers to opportunities and ways to find solutions to challenges. It is in this space that occupational therapy acts, helping to release the flow of the river and promoting a more balanced and functional life.

In this approach, the therapist identifies the "elements of the river" in the client's life (waters, rocks, banks, etc.). It helps to understand the barriers and resources available. In intervention planning, the focus is on increasing the flow of the river, either by removing obstacles (rocks), adjusting banks (environment) or adding more features (logs). Unlike other models, Kawa recognizes unique cultural perspectives, especially useful in contexts where individual and collective values vary widely. In a practical example, we can imagine a person who faces depression (rock) and has a limited social support system (small trunks). The therapist helps that person find meaningful new occupations (stronger water), improve their social interactions (widen the margins), and reduce the effects of the mental health problem (shrink the rock) (Iwama, 2006).

Sempik, Rickhuss, and Beeston (2014) discuss the use of plants and gardening in a structured and formalized manner as a strategy to promote health and well-being, a concept widely recognized as therapeutic horticulture or horticultural therapy. These terms, although often used interchangeably, have generated some confusion in recent decades, especially with the increasing adoption of the term STH (Social and Therapeutic Horticulture) in the United Kingdom. STH is currently the preferred term to describe this practice, in part due to its more comprehensive approach and its focus on promoting both individual and collective well-being.

STH is carried out under the supervision of trained therapists, who have experience in both horticulture and health and social care aspects. The practice is administered by qualified professionals, with a diversified training profile, and some of these therapists have training in occupational therapy, which enriches the therapeutic approach (Sempik et al., 2005). This diversity of qualifications and experiences allows STH to be applied holistically, meeting a wide range of participants' mental and physical health needs.

The use of gardening practices in the context of STH offers a range of therapeutic benefits, promoting not only the improvement of mental health but also the strengthening of social and community relationships. Gardening, as a therapeutic practice, facilitates connection with nature, reduces stress and anxiety levels, and contributes to the emotional well-being of individuals, especially those facing psychological or socialization challenges.

The integration of STH with areas such as occupational therapy is particularly relevant, since it provides professionals with the opportunity to use gardening activities as therapeutic intervention tools, meeting both the individual and collective needs of the participants. Thus, STH represents a valuable therapeutic approach that can be applied in a variety of settings, from community programs to clinical settings, helping to improve the quality of life and mental health of individuals.

The "Cerro Comedible" project, by Mansilla et al. (2023), proposes to transform a greenhouse into a therapeutic space, creating a community and educational garden. In addition to promoting learning, the project strengthens ecosocial practices and receives support from Rebrotá, an initiative that aims to implement the first National Therapeutic Park in a public health unit. This park will integrate nature and health, allowing access to medical care in a natural environment.

Mansilla (2023) highlights that interaction with natural elements has restorative effects, increasing concentration and promoting well-being. In response to the growing urban

disconnect with the natural environment, his ethnographic approach utilizes community gardens for social inclusion and occupational participation. These spaces favor continuous learning and connections between diverse individuals, creating a sense of community.

The initiative respects individual skills, promoting collaboration and autonomy of participants. Over time, there is an increase in confidence and willingness to take responsibility. In addition, interaction with external members expands social networks and strengthens the commitment to maintaining the space.

Occupational Therapy, from a socio-ecological perspective, innovates by using horticulture for social inclusion and strengthening the connection with nature. Projects such as "Cerro Comedible" reaffirm the importance of local culture and environmental practices. Horticulture not only favors mental health, but also promotes social equity, aligning with the UN Convention on the Rights of Persons with Disabilities.

Horticultural therapy, which involves gardening activities conducted by therapists, has been shown to have benefits for mental well-being since the 1990s, especially for people with mental disorders, improving social skills, self-esteem, and time management (Smith, 1998). Studies in Sweden point to emotional, cognitive, and sensorimotor improvements, in addition to increased social participation and life satisfaction (Wästberg, 2021). In Canada, gardening strengthens community cohesion and assists immigrants in adapting, while in the U.S. it strengthens family bonds (Shiue, 2016).

In addition to relieving stress and anxiety, this practice promotes social inclusion and self-realization, being accessible and low-cost (Mourão et al., 2022). Considered a cognitive protection strategy, it stimulates the internal locus of control and reduces symptoms of sadness and anxiety. Studies highlight that interaction with nature improves concentration and provides restorative effects (Algado, 2012).

Community gardening strengthens social bonds and social cohesion, creating inclusive spaces for the exchange of experiences (Pálsdóttir, 2014). Projects such as the Sprout garden demonstrate that these environments function as therapeutic sites that promote social interaction and a sense of belonging (Whatley, Fortune & Williams, 2015). Collaborative participation and group activities favor self-esteem and social inclusion.

Research reinforces that gardening, as a therapeutic practice, improves mental health and facilitates social and occupational integration, creating inclusive and sustainable spaces that promote well-being and connection with the community (Suto et al., 2015).

The study by Mansilla *et al.* (2023) highlights the intersection between permaculture and occupational therapy as a promising field for promoting mental health, rescuing human relationships, and encouraging social participation. Permaculture, with a holistic approach focused on sustainability and harmony with nature, offers an ideal context for therapeutic interventions that value the connection with the environment and between individuals.

3 DISCUSSION

The results of the literature review indicate that the nature-based practices used by occupational therapists have been shown to improve the mental health of the participants, with the strengthening of the sense of community and belonging. Activities such as community gardening appear to provide a safe space for individuals with mental health challenges to reconnect with nature and each other, mitigating the effects of loneliness and strengthening the social fabric that is essential for psychological well-being. The sharing of knowledge and collaboration in practical activities are decisive for the construction of a sense of cohesive community. These interactions have helped participants feel valued and promote social inclusion that is vital for recovery and mental health.

The integration between such practices and occupational therapy seems to us to meet some unique mental health needs, in addition to contributing to the construction of a more inclusive and sustainable society. Participants demonstrated that by growing a garden, they are cultivating their emotional health and interpersonal relationships, suggesting that practices that promote sustainability and social connection are effective for individual well-being and community transformation.

The proposition of Ecosocial Occupational Therapy, which goes beyond the traditional biomedical model, adopting a holistic perspective that considers the interactions between health, environment and social inclusion, indicates an action that not only promotes mental health, but also strengthens cohesive and sustainable communities, supporting the restoration of the bond between human beings and the environment, contributing to a more sustainable and inclusive future.

We understand that the contribution of Ecosocial Occupational Therapy can offer convergent elements for critical and psychosocial action in mental health, considering individual capacities and community resources by promoting opportunities for reconnection and sustainability of the planet.

Turning to the populations served in occupational therapy, the denial of universal access to opportunities and resources necessary for full cultural participation in occupations of health care and recovery is evident (Townsend, 2022). Occupational justice has been understood as the guarantee of the right of all people to engage in occupations that they need to survive, meaningful occupations that contribute to their own well-being and the well-being of their communities (Townsend; Marvalb, 2013).

We highlight the propositions in Latin American critical Occupational Therapy, based on the idea of justice as a common good and not an individual one, sustained by the affirmation of Good Living in community, assuming an anti-colonial, anti-patriarchal, anti-capitalist (Córdoba, 2020) and anti-racist logic, which seems to us to dialogue with the recognition that care in occupational therapy in mental health must be alert so that it is not captured as a mechanism for maintaining coloniality, hierarchizing existences, beliefs, experiences and territorialities, which involves the invalidation of some existences. Thus, it is worth presenting some extension activities that have been developed with populations in conditions of marginalization and vulnerability, with the intention of promoting mental health in an inseparable way with the reconnection and preservation of the planet.

3.1 POSSIBLE EXTENSION ACTIVITIES FOR THE POSTPONEMENT OF THE END OF THE WORLD

For Nascimento (1990), the situation of lack of rights defines the quality of the relationship between occupational therapists and their patients, calling on professionals to take a critical view of reductionist paradigms, unmasking practices named as therapies that would serve to hide the violence of institutions of exclusion. Mangia and Nicacio (2001), in this sense, highlighted the need to overcome the concept of health as reparation of damage and understand it as the production of life, inviting professional action that abandoned the perspective of reintegration as equivalent to productive normality, taking up processes oriented to the production of autonomy and coping with social exclusion, favoring processes of reappropriation of oneself and of the bonds with the world. As a form of resistance and opening of practices that articulate mental health and the health of the planet, we have been developing at the Federal University of São Paulo some initiatives that we would like to share.

3.2 DIV3RSO: MENTAL HEALTH, HARM REDUCTION AND HUMAN RIGHTS

DiV3rso is an extension-based university group that has been dedicated to the development of socially referenced knowledge, through the study of emancipatory methodologies of mental health care, drug use and associated vulnerabilities, with expressive participation of people who experience such issues (Surjus *et al.*, 2024). It is born from the awareness of social responsibility of the Public University and the ethics of collective construction of solutions for life in the contemporary, alongside the most dispossessed, those who also have their suffering stigmatized and criminalized. Composed of professors, students and members of the community of the Metropolitan Region of Baixada Santista, the group has been developing projects aimed at the qualification of community leaders, workers and users of public services, together with the training of undergraduate and graduate students, in the area of mental health, drug policy and human rights.

Inspired by bell hooks that rescues the ancestral paths of self-recovery and collective liberation, taken in the field of inseparability between individual and collective subject, discarding cosmovisions of opposition between "I" and the "other", we have oriented our efforts in the convocation of a search for the awareness of the forces of oppression, creating effective resistance and recovery of a collective integrity devastated by silencing, by systematic racism and dehumanization. (Surjus *et al.*, 2024, p. 13)

3.3 DECOLONIAL HARM REDUCTION

For 7 years, we have been conducting theoretical-practical training in Harm Reduction and Autonomous Medication Management in the Baixada Santista Region, with a plural composition of the team and the students, in a dynamic way, at the University and in different territories, involving the homeless population, sex workers, trans people, people with disabilities, indigenous communities, settled communities. Having the peers of these populations as the main interlocutors and protagonists of the process, engaging undergraduate, graduate and community students in strategies for the preservation of life, peer education and the construction of common projects. The processes have provided a critical reflection on what drugs actually are, what generates suffering and what are the community strategies that have been developed for collective care and loving resistance.

Harm reduction proves to be a decolonial strategy by incorporating critiques and alternatives to the coloniality of the knowledge and practices underlying prohibitionist and necropolitical policies, based on structural racism and sexism, heteronormativity and class

domination that have sustained structural inequalities since these lands and peoples began to be colonized by Eurocentric whiteness. (Surjus, Passador, 2021, p. 41)

3.4 KWERÁ LABORATORY: CULTIVATING FOREST MEDICINE

The Kwerá Forest Medicine Laboratory was born linked to the International Observatory of Autonomous Medication Management Practices (GAM), with a view to advancing in the proposition of scientific activities of a socio-environmental nature. GAM practices propose a critical approach to the use of psychotropic drugs as a priority resource in mental health, recovering processes of self-knowledge, belonging and protagonism.

The experiences of exchanges with indigenous harm reductionists of the Tupi-Guarani ethnic group defined the name of the space and directs efforts towards not understanding nature as a locus for the withdrawal of resources for care, but as a laboratory for reconnecting with our ancestry, reconnecting with nature and recovering care from this contact and what is produced from it. Still in the process of implementation, there is a desire for those involved to reduce the use of industrialized medicines and greater autonomy in self-care.

3.5 NHIMONGUETA RENDÁ: THE ABODE OF MEDITATIONS

The project "Nhemonguetá renda, a morada das meditações" instituted by the women, Tupi-Guarani leaders, from the Tabaçu Rekó Ypy Village in the Indigenous Territory of Piaçaguera, in Peruíbe, on the south coast of São Paulo, Brazil, is an intense process of healing and strengthening the feminine in the community. A house in the forest, a territory open to dialogue with the ancestors, enchanted and with our interior, bringing connections with the pluriverse and with the elements that circulate our Nhanderekó (our philosophy of life), bringing strengthening of the spiritual body, reestablishing ancient techniques and alchemies. Through community work, joint efforts involving the other partners of DiV3rso, students and community members with street experience and drug use, the bioconstruction of the space began. An exchange of traditional knowledge, permaculture techniques and scientific research resulted in the beginning of the sustainable construction of the space. The journey began with the choice of the location, intuited by the enchanted through the spiritual leadership Dora Dina.

3.6 TRADITIONAL USES, FAMILY FARMING AND CANNABIS ASSOCIATIONS: RECOVERING ANCESTRAL RELATIONSHIPS AND PROMOTING DEMOCRATIC HEALTH CARE

The Extension Project recovers marijuana as a plant for millennial human use by different peoples and in different cultures, which has had its planting, cultivation, commercialization and use prohibited by international agreements since the 1920s. It aims to carry out, in cooperation with the Tupi-Guarani people of Peruíbe-SP, the Landless Rural Workers Movement (MST) and a Cannabis Association, technical, scientific and educational development actions in order to contribute to the promotion of access to cannabis therapy and the production of knowledge about the potential use of the marijuana plant. Exchanges, meetings and workshops are held, with a view to the collaborative production and resumption of knowledge about the traditional and current uses of marijuana and derived medicines in the three partner communities. to support regulatory processes. The processes should result in the expansion of the possibilities of participation with a view to an equitable regulatory process in Brazil.

4 FINAL CONSIDERATIONS

The article proposed a dialogue between nature-based practices and Occupational Therapy aimed at promoting mental health, by reconnecting people with nature and strengthening social relationships. The results of the review indicate that activities such as community gardening can improve the mental health of people with stress, anxiety, and depression; Interaction with nature and collaborative work can reduce the effects of social isolation, strengthening bonds and providing a sense of belonging and recognition, essential for psychological well-being.

Occupational Therapy from an ecosocial perspective has strategically nucleated the articulation between health, environment and social inclusion, contributing to interventions that address unique needs and stimulate social and environmental changes, promoting resilient and inclusive communities. The university extension projects developed at Unifesp are promising for the promotion of mental health, inseparable from social cohesion and inclusion and sustainability.

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