Source: *The Straits Times,* pC1
Date: 26 June 2024

IN THE GREEN OF HEALTH

Research shows that engaging with greenery can reduce stress and improve well-being

Horticulture therapist intern Tham Xin Kai conducted an activity in which participants were encouraged to create a frame with succulent plants to learn about resilience. PHOTO: COURTESY OF THAM XIN KAI

Akshita Nanda
Correspondent

A breath of cool, floral scent invigorates visitors to the second floor of Alexandra Hospital's Block 29.

This is a deliberate move from the curators of an ongoing exhibition, Nature's Embrace: A Gift To The Mind, where immersive spaces encourage visitors to engage in activities involving nature.

A visitor can relax before a water feature, rake gravel in a dry garden or take a virtual forest walk in a room perfumed with the scents of a tropical rainforest.

Dr Pearlene Ng, education director of the National University Health System (NUHS) and co-curator of the exhibition, says: "In therapy, we often use scent to ground you in the present moment. The scents in this exhibition space allow visitors to leave their worries behind and enjoy the experience."

Nature's Embrace, which runs till end September, is curated by the Mind Art Experiential Lab (MAELab) of the NUHS and the NUS Yeo Boon Khim Mind Science Centre and supported by the National Parks Board (NParks).

Associate Professor John Wong, the centre's director, says his team works on non-drug approaches for preventative mental health care.

The centre takes an evidence-based approach to optimise mental well-being and enhance emotional resilience across different demographics in Singapore.

MAELab is the platform to explore creative and trans-disciplinary approaches for the centre's work. Nature's Embrace showcases research on how landscapes can be designed to maximise health benefits, as well as how gardening, taking nature walks and being exposed to greenery can reduce stress and improve mental health.

The exhibition also suggests some solutions to the challenges of encouraging people to engage with nature in hot and wet Singapore.

Apart from the weather, the Republic is losing natural forested spaces to urbanisation. Ms Sophianne Araib, group director of horticulture and community at NParks, says that Singapore faces intense land-use pressures from housing, transportation, industry and other such needs.

She adds that Singapore's green cover is now over 40 per cent, with 7,800ha of green space in the form of nature reserves, nature parks, gardens and parks, and integrated greenery. As land pressures grow more acute, creative solutions will be needed to restore nature into the urban landscape.

The average Singaporean is more likely to experience nature indoors, or in a controlled environment.

The good news is that engaging with plants and natural materials indoors can also have therapeutic benefits, which is why MAELab supplemented the Nature's Embrace exhibition with workshops on making terrariums or creating art from dried moss.

Dr Ng says: "In urban and hot environments, accessing nature can be difficult for some. By offering virtual experiences and indoor activities, such as terrarium workshops, we provide alternatives that can be enjoyed regardless of outdoor conditions.

"Research shows that having a terrarium in your home or office can bring a touch of nature indoors and provide a calming and soothing effect, reducing stress and improving overall well-being."

GROWING INTEREST IN HORTICULTURE AS THERAPY

The benefits of horticulture have been studied locally, even before the Covid-19 pandemic lockdowns of 2020 renewed interest in home gardens and nature walks.

A study by NParks and researchers from NUS, published in 2018 in the International Journal of Environmental Research and Public Health, looked at the effects of horticultural therapy on adults in their 60s and 70s.

Those who engaged in indoor gardening, growing and harvesting plants, and guided walks in parks had reduced levels of chemicals in the blood that are associated with inflammatory diseases, depression, dementia and cancer.

Research shows that having a terrarium in your home or office can bring a touch of nature indoors and provide a calming and soothing effect, reducing stress and improving overall well-being.

DR PEARLENE NG, education director of the National University Health System and co-curator of the Nature's Embrace: A Gift To The Mind exhibition

Plants provide a breath of fresh air, even when in a pot on a desk indoors, and the texture and scent of soil have been shown to help improve mindfulness and reduce stress.

No wonder then that there was a "great Covid-19-era gardening craze", as the media dubbed it during the early 2020s, with lockdowns and reduced travel.

More Singaporeans became plant parents, with cuttings of some highly prized variegated plants being sold for hundreds of dollars per leaf cutting.

NParks also distributed complimentary packets of vegetable seeds to interested members of the public as part of the Gardening with Edibles initiative to enhance well-being in the community.

A survey of about 8,800 people who took part in this initiative found that the mental resilience of those who gardened was significantly higher. More than one hour of weekly gardening time was associated with better mental resilience scores, according to the study done by NParks and NUHS researchers. It was published in 2021 in Urban Forestry & Urban Greening.

Singapore is increasingly looking to use horticulture to aid active ageing and healthy longevity.

One of the visitors to Nature's Embrace in May was Ms Wendy Lim, who oversees four Active Ageing Centres under social services agency Reach Community Services. Two of the centres she oversees have regular gardening activities for seniors.

Growing and harvesting herbs are physically engaging and prompt socialisation between fellow gardeners. People like using the herbs that they have grown, and the scent and taste are also stimulating, says Ms Lim.

Another research project on the impact of urban farming on quality of life is being led by Assistant Professor Cynthia Chen of the Saw Swee Hock School of Public Health. Over 24 weeks from April, dozens of people aged 50 and older are being led to farm vegetables and to engage in other plant-related activities at Jurong Lake Gardens.

Prof Chen says: "We are keen to understand how engaging with nature and caring for plants can enhance older adults' well-being and quality of life.

"We have finished a small-scale study with 20 older adults, where findings indicated a slight reduction in anxiety and stress, and an improvement in strength. As such, we have scaled up our project to include more than 120 older adults in our programme."

The study is funded by the National Medical Research Council, and is a collaboration with NParks and social enterprise Hortherapeutics.

Mr Pong Jun Xiang, 42, director of Hortherapeutics, says that the surprisingly hot weather since April has been a challenge.

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Visitors to the Nature's Embrace: A Gift To The Mind exhibition can rake gravel at a dry garden for mindfulness. ST PHOTO: NG SOR LUAN

NATURE'S EMBRACE: A GIFT TO THE MIND

WHERE Level 2 Block 29 (above cafeteria), Alexandra Hospital, 378 Alexandra Road
WHEN Until end-September
ADMISSION By registration only at str.sg/CJi9

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Source: *The Straits Times*, pC2
Date: 26 June 2024

NParks maintains 14 therapeutic gardens in Singapore

A forest bathing session organised by the Mind Art Experiential Lab. Engaging with greenery through activities like forest bathing can benefit your health. PHOTO: MAELAB

FROM C1

To cope, outdoor activities are conducted only in the early, cooler parts of the day, and participants are kept indoors with other activities when it is hotter.

AIM FOR AN OUTDOOR NATURE FIX TOO

Despite the uncomfortable weather conditions, research indicates that engaging with nature outdoors has significant benefits.

Ms Lim, 61, likes taking regular walks on nature trails in Singapore. She finds it a relaxing change from the everyday hustle and bustle.

"I find that my pace slows down a great deal because I want to just look for pretty butterflies or mushrooms," she says.

When travel was curtailed during the pandemic and social distancing enforced, more Singaporeans took to visiting nature parks around the island, according to the Ministry of National Development in a Parliamentary reply in February 2021.

Visiting a park lowers stress, according to an NParks study with the Saw Swee Hock School of Public Health, published in 2022 in Mental Health and Physical Activity. The study found that people who visited a park during the day were less stressed in the same evening as compared with those who did not.

Landscapes can also be designed based on research to maximise interaction with nature and improve visitor well-being.

NParks maintains 14 such therapeutic gardens in Singapore, which are specially designed and programmed to provide various health benefits for the young and old, relieving mental fatigue and improving emotional well-being.

Yishun Pond Park, which opened in late 2023, is wheelchair-accessible for patients from the nearby Khoo Teck Puat Hospital.

Another garden, which opened in Sembawang in late 2023, has features such as an inclusive outdoor fitness corner and a forest classroom. It is designed to include children with special needs, such as mild autism, and seniors with dementia.

Ms Lim says that one of the activity centres she oversees took seniors on a forest walk locally.

The activity reduced stress and stimulated positive emotions. Many went back with leaves and plant materials.

The virtual forest bathing in Nature's Embrace is an introduction to the benefits of such an experience and not a substitute for it, says Dr Wong of the Mind Science Centre.

People can engage in forest walks during cooler times of the day and stick to areas shaded by tree canopies.

"In an increasingly urban and hot environment, accessing nature can become more challenging or uncomfortable for some. This reality underscores the urgent need to integrate and preserve green and chill spaces within urban landscapes, and also think of creative ways to encourage people to get in touch with nature in their own comfort," he says.

Indeed, after Ms Lim tried the virtual forest walk, she said: "It made me want to go for more walks."

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ASSOCIATE PROFESSOR JOHN WONG, of the Mind Science Centre

GROWING FIELD OF HORTICULTURE THERAPY

Gardening as a social activity is just the beginning of how horticulture can be used therapeutically.

Mr Pong of Hortherapeutics says that therapeutic horticulture involves plant-related activities that are designed with specific aims in mind, such as stress reduction.

His enterprise conducts corporate workshops for mindfulness, or training on plant-related activities for improved mental well-being.

When making a terrarium, or art out of dried moss, the desired outcome is not a brilliant work of art, but a positive impact on the participant's well-being.

"Therapeutic horticulture involves a process that is more important than the product," Mr Pong says.

"For example, in our terrarium workshops, we don't emphasise that terrariums should look a certain way. We tell participants that as they make their terrariums, they must feel the soil or potting mix. Don't just assemble it, have a feel of what goes into creating a home for a plant."

Then there is horticulture therapy, an even more specialised field. Mr Tham Xin Kai, 37, is a Singaporean interning as a horticulture therapist in the United States. In the US, his work is integrated into healthcare and social services.

Activities are designed around a person's interests and specific medical or psychological needs. He writes case notes and works alongside the doctors and other therapists overseeing the patient's care.

Potting plants might divert patients in acute rehabilitation centres; making a herb bouquet stimulates the senses of patients recovering from brain injuries; and making a mini garden in a bowl helps people with developmental disabilities promote their fine motor skills, as well as develop a sense of self-efficacy.

In Singapore, gardening and plant-based activities are used for social and general well-being, but Mr Tham hopes to take things a step further.

"It's my personal mission to convince doctors in Singapore that there are real benefits to doing horticultural therapy in hospitals," he says.

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