Amid overflowing pots of purple pansies and cheerful white English daisies, Alicia Green — sunglasses perched atop her head and a pair of gardening gloves tucked into a pocket of her jeans — stood before a group of military veterans and presented what she said could be a powerful tool to heal the wounds of war.

"This," Green said, holding a small shovel in her hand, "is called a trowel."

Fresh air and sunshine have for centuries been thought to be therapeutic. Now, a partnership between the Chicago Botanic Garden and Thresholds, a mental health services agency, is attempting to leverage the soothing power of nature to treat veterans struggling with post-traumatic stress disorder and other ailments.

On a recent spring morning, eight veterans, whose ages ranged from their 30s to their 60s, gathered in an open-air classroom at the botanic garden to watch a gardening demonstration. Then they armed themselves with trowels and headed to a series of raised flower beds where, over the next several months, they will tend a section of garden and watch it grow.

With her hands in the dark, rich soil, Army veteran Kishauna Hampton, 32, finds the memories of war come back to her but said, "They're not so bothersome when I'm here." She spent 18 months driving a supply truck in Iraq, she said, and witnessed the horror of roadside bombs.

Luck, she said, kept her alive in Iraq. But back home, she has struggled with nightmares and panic attacks. She couldn't find a job and lived in her car for six months, she said, before connecting with Thresholds and beginning a long process of recovery. Now, she works full time as a legal assistant and manages her anxiety, in part, with the gardening program.

Nurturing the flowers "improves my mood and my spirit," she said, as she nudged away a bit of earth to plant an orange zinnia.

Scientific evidence is mounting in support of horticultural therapy, and experts are increasingly trying to understand the complex factors that make it effective. A Northwestern University researcher hopes within the next year to begin testing the cortisol and other hormone levels of veterans in the Chicago Botanic Garden program as a way of gaining insight into the mechanisms at play when a person spends time gardening.

"If we are going to use nature as medicine, we need to know the dose," said Teresa Horton, a research affiliate at Northwestern, repeating what has become a mantra of researchers. Among her questions: Could the therapeutic effects of gardening be achieved with other activities, such as talking to a friend? Or is there something special about plants — seeing them, touching them, smelling them — that is particularly restorative?

While researchers delve into the science, veterans from conflicts past and present are increasingly turning to a movement of so-called "green care," which can include everything from hiking to horseback riding, said Stephanie Westlund, author of the 2014 book, "Field Exercises: How Veterans Are Healing Themselves through Farming and
"We have this connection to nature that is not totally explainable but works really well," she said. "For someone who has been around death, gardening and farming in particular give them a chance to nurture life."

The seed of the idea for the veterans program at the botanic garden took root when Thresholds, the mental-health services provider, held a staff retreat at the sprawling, 385-acre property of formal gardens, greenhouses and meadows in the summer of 2013. At the end of the afternoon, several Thresholds staffers turned to one another and agreed: We have to bring our veterans here.

The Chicago Botanic Garden had, in fact, long recognized the power of plant therapy. Members of the Chicago Horticultural Society had worked with World War II veterans as early as the 1940s, according to Cathy Jean Maloney, author of the 2015 book "Chicago and Its Botanic Garden." When the society opened the botanic garden in Glencoe in 1972, it set aside space for a learning garden for the disabled, which, built in 1976, was the second garden on the property and said to be the first of its kind in the United States.

In more recent years, the botanic garden established a horticultural therapy department that sent therapists to hospitals and hosted groups at the garden for tours and classes. But the on-site programs were mostly day-long events. Social workers and therapists wondered if they could enhance the benefits of their services for veterans through a more ambitious curriculum that would unfold at the garden across several seasons, from plantings in the spring to a harvest in fall.

"A garden contains just about every metaphor for growth," said Barbara Kreski, director of horticultural therapy services at the botanic garden. "There's life and death, beginnings and endings."

Now, once a month, eight to 10 veterans pull weeds and plant flowers in a hands-on teaching garden where four raised flower beds bloom with purple verbena and yellow daisies.

As spring turns to summer, the veterans will pick tomatoes from the vines in the nearby vegetable garden. They'll create pressed-flower note cards from the blooms they helped nourish. And they'll paint garden stones in memory of people they've known who have died.

"There is a little grief therapy involved in all this," said Fernando Valles, a Thresholds clinician who helps lead the sessions.

Many of the veterans have struggled with serious challenges, including homelessness and mental illness. Some have served time in prison. All receive traditional therapy and medical treatment and, with a counselor at their side, attend the gardening sessions as a supplementary exercise.

"Recovery is so subtle," said Lydia Zopf, director of the Veterans Project at Thresholds. "We had a veteran who came to the garden. He was very shy and didn't feel comfortable talking. But by the end, he had made a friend."

"Changes can be small," Zopf said. "But incredibly meaningful."

On that recent spring day, the sun shone and the wind stirred the trees as eight veterans worked in the flower beds, spreading fertilizer and planting sprouts of hollyhock.

Later, they would take a tram tour of the expansive grounds and sit for a picnic lunch. But in that moment it was enough to enjoy the gifts of the garden.
"To me, it's one of the closest places to heaven right here on earth," said Jaffery Hart, 60, who struggled with nightmares and anxiety related to his service in the Marines.

At the botanic garden, he has found a sense of purpose and peace.

In this lush, green setting, he said, "There's no room for anger."

"There's only room for new beginnings. A new plant sprouting up," he said. "Or a person finding themselves."

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