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Prayer and the brain

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SCIENTIFIC research suggests that prayer and other forms of focused contemplation may have benefits for the brain, particularly among older adults, says Neal Shah, an American health care innovator, researcher and entrepreneur.



In a TikTok video, Shah says a 2024 study involving nearly 400 older adults examined how different activities throughout the day were related to memory and thinking ability. Researchers found that sedentary activities did not have the same effects.

Passive activities such as watching television and using digital devices were associated with poorer cognitive performance, while mentally engaging activities — including reading, listening to music, arts and crafts, playing musical instruments and prayer — were associated with better cognitive outcomes.

One possible explanation comes from research into what happens in the brain during prayer and meditation. In the late 1990s, physician Andrew Newberg studied Franciscan nuns and Tibetan Buddhist monks using Single-Photon Emission Computed Tomography brain scans. His early studies found changes in blood flow in areas associated with attention, concentration and awareness.

During focused prayer, activity increased in the prefrontal cortex, which plays an important role in attention, decision-making and emotional control.

Activity decreased in parts of the parietal lobe involved in distinguishing the self from the surrounding environment.

This may help explain why people sometimes report feelings of peace, timelessness or connection during deep prayer. “Neuberg’s scans studied only a handful of people, so consider this as preliminary evidence. I think it pointed at something that later work keeps supporting,” Shah says.

Prayer may also affect the body’s response to stress. Cardiologist Herbert Benson’s research on meditation led to the concept of the “relaxation response.” Repeated mental focus — whether on a word, phrase or prayer — was found to slow the heart, lower blood pressure, deepen breathing and

reduce oxygen consumption. These effects are essentially the opposite of the body's fight-or-flight response.

Shah says this may be important for brain health because prolonged stress is associated with elevated levels of cortisol. Chronic exposure to high cortisol levels has been linked to damage in the hippocampus, a brain region essential to memory and particularly vulnerable to diseases such as Alzheimer's. Activities that regularly reduce stress could, therefore, indirectly support cognitive health.

The idea that focused prayer can help control thoughts is much older than modern neuroscience, Shah points out. Early religious thinkers described practices resembling techniques now used in psychology.

Around the fourth century, the Christian monk Evagrius Ponticus wrote about troubling, repetitive thoughts and recommended focused prayer and mental watchfulness.

Centuries later, the Jewish philosopher and physician Maimonides emphasized kavanah, or genuine inner concentration during prayer, rather than simply repeating words without attention. Both traditions emphasized deliberate control of attention, which is also important in modern psychological approaches.

Another potential benefit of prayer concerns loneliness, which has emerged as an important health issue among older people, Shah says.

A 2024 analysis combining 21 long-term studies involving more than 600,000 people found that loneliness was associated with a 31-percent higher risk of developing dementia. Loneliness here refers not simply to living alone but to the subjective feeling of being socially disconnected.

Prayer may help some people cope with loneliness by creating a sense of connection with God or with something larger than themselves. For a person who is physically isolated, this feeling may provide emotional comfort and reduce the experience of being completely alone. The psychological effect may be meaningful regardless of how its religious significance is interpreted, Shah says.

Religious participation may provide additional benefits because it combines prayer with social interaction. Research led by Harvard's Tyler Vander-Weele followed more than 74,000 women for 16 years. Women who attended religious services more than once a week had a 33-percent lower risk of dying during the study period than those who never attended. Other research linked frequent attendance with substantially lower suicide rates and fewer so-called deaths of despair.

These findings do not prove that religious attendance itself caused better health, Shah says. People who regularly attend services may differ from non-attenders in many other ways. Nevertheless, religious communities can provide several factors associated with healthy aging: social belonging, purpose, regular routines, singing, opportunities to leave the home and interaction with other people. These may help reduce loneliness and social isolation.

Prayer and religious music may have particular significance for people already experiencing cognitive decline.

Research cited in the Harvard paper found that among older adults with mild memory impairment, more frequent private prayer was associated with fewer behavioral problems, better cognitive scores and fewer sleep disturbances. These ndings could be especially relevant to caregivers because nighttime agitation and sleep problems can place considerable strain on families.

Familiar prayers and hymns may also remain accessible after other memories have deteriorated, Shah says. Dementia often affects newer memories before deeply established ones. Prayers, songs and rituals learned early in life and repeated for decades may remain available even when a person has difficulty remembering recent events or recognizing people.

This helps explain reports of people with advanced dementia who can no longer hold an ordinary conversation but can still recite a familiar prayer or sing a hymn learned in childhood. Such experiences are not necessarily medical miracles, Shah says. They may reflect the durability of deeply learned and repeatedly practiced memories.