



# Suicide in Patients with Dementia



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**Abbreviations:** AD: Alzheimer's Disease; PD: Parkinson's Disease; STN DBS: Sub Thalamic Nucleus Deep Brain Stimulation

## Short Communication

Suicide is a major public health issue in many industrialized countries. It is one of the top ten causes of death and older age is a significant risk factor for suicide. For example, in Japan older adults (age  $\geq 65$ ) shared about 18.5% of total population but account for 24% of all suicide, in Taiwan, older adults representing 12.4% of the total population and account for 28.9% of suicide death. Suicide rate exponentially increases with age and in many countries, more men than women die from suicide; for instance. But in China, it is shown that suicide rate is higher in women than men. However, the suicide rate among elderly is comparatively high in many Asian countries; for instance, South Korea had the highest suicide rate and above one-fourth suicides in the world occur in India and China [1].

Dementia is a broad term for a progressive deterioration in memory ability and other cognitive function, psychological behavior and ability to manage normal life. It is a common syndrome among elderly. Some types of dementia are Alzheimer's disease (AD), vascular dementia, front temporal dementia, and Lewy bodies and Parkinson's disease (PD). Some symptoms associated with dementia are: progressive and frequent memory loss, changes in personality, loss of language and communication skills, impaired judgment, learning and concentration difficulties, a decline in ability to perform routine works, etc. With the aging world, dementia patient is increasing with an alarming rate. It is affecting 46.8 million people worldwide, there are 7.7 million new cases every year and the number wills 131.5 million in 2050. In terms of the number of dementia patients, China ranks first in the world, accounting for nearly 20% of all dementia patients worldwide. By 2025, about 7.3 million people (1 in 5 people) over age 65 will have dementia in Japan. A study found that among common types of dementia, only Alzheimer's disease was a significant risk factor for suicidal ideation and 'wish to die' [2]. AD (contributing 50%-75% of dementia cases) is progressive and degenerative;

caused by abnormal deposits of protein in the brain. AD destroy the cells which control memory and mental function. Advancing age, family history with AD, Diabetes Mellitus, Depression, Obesity, Hypertension, Hear trauma, Alcohol consumption, etc. are statistically significant and more likely to develop AD. Not only AD, most disorders associated with dementia are progressive, degenerative and irreversible. Dementia is strongly associated with late-life depression. A number of studies have been suggested that the most significant risk factor for suicide is the psychiatric illness, particularly depression. It is found that 45% of dementia patients with 'major depression' and 12% with 'minor depression' had thoughts of suicide. But, the role of dementia independently for suicide is controversial [2]. It is reported that early stage dementia is a risk factor for suicide in later life [3]. The painful impact of dementia and the experience of cognitive decline can't avoid fear. Dementia patients fear being diagnosed. Dementia sufferers do not bear the disease passively as a result of fear of diagnosing and fear of adjusting detests environments.

But the risk of suicide declines at higher stages of deterioration in executive function and increased supervision. Studies have shown that many people with dementia can adjust to despise situations, have more positive evaluation of their lives, are able to enjoy mental and physical activities, do not suffer as a result of the condition that they previously feared and up to 67% of them with mild to moderate dementia associated with a very good or good quality of life. It is shown from a study that 30% of patients with Alzheimer's disease had wished to die and 9% made suicide threats at least once weekly [1]. A study among older people in South Korea found that 14.6% of them wished to die, about 40% of those wanted to suicide had depressive disorders and 22% had dementia [1].

Parkinson's disease is also a risk factor for suicide among elderly. Parkinson's disease is a progressive neurodegenerative

disorder of the central nervous system which results from loss of neurotransmitter dopamine in the brain [4]. It is characterized by tremors, motor, cognitive, behavioral, speech impediment and other non-motor symptoms and it is account for 3% to 4% of all dementia cases. The Sub thalamic nucleus deep brain stimulation (STN DBS) is a well-established treatment for advanced Parkinson's disease. A meta-analysis of 11 epilepsy surgery studies reported that the suicide rate of patients with epilepsy after surgical treatment was 0.98% (24/2425) which is approximately 30 times higher than of the general population [5]. It is found from a large prospective multicenter study of 5025 patients undergoing STN DBS that the rate of completed suicide was 0.45% (24/5311) and attempted suicide was 0.9% (48/5311), which are also far higher than in the general population [4].

From these evidences, it can be concluded that suicide or suicidal ideation is associated with dementia (especially with early-stage AD and advanced PD). Although the suicide rate has been slightly declined since last decade, it will be a great concern

in the aging world. Since about 19% of total elderly will live only in Asia by 2050, suicide in dementia patients will be major health issues in Asian countries. So, research on risk factors and prevalence of suicide in dementia should give more attention.

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