Review

New Lessons of Nurturing Life for Geriatric Patients

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Our new lessons of nurturing life to make happiness and well-being of geriatric patients suggest comprise several important steps. First, geriatric patient care should not be delegated to specialists who focus on individual organ system. Instead, we should respond to the patient’s condition based on comprehensive assessment to identify the single pathogenesis. Second, we should appreciate that the behavioral and psychological symptoms of dementia (BPSD) often reflect the behavioral and psychological symptoms of the caregiver (BPSC), and in particular the caregiver’s attitude. Third, pleasant stimulations to the limbic system should receive more emphasis than attempting brain training in atrophied portions of the neocortex. Fourth, we should aim not for “successful aging,” but for “balanced aging.” Fifth, we should rely less on drug-based therapy and utilize more non-pharmacologic approaches to appropriate therapy. Geriatric patients should be cared for based on our new lessons of nurturing life rather than the heavily medicalized treatment modalities that are in wide use today.

Keywords: balanced aging; behavioral and psychological symptoms; geriatrics; limbic system; single pathogenesis


We have previously discussed how to care for aged people in terms of geriatric medicine (Sasaki 2007; Arai et al. 2010; Arai et al. 2012) in the context of the primary objective of geriatric medicine: the happiness and well-being of elderly patients. This is prefigured in the works of the Japanese Neo-Confucianist philosopher, botanist, and writer, Kaibara Eikiken (1713), who in published Lessons of Nurturing Life, which has been promoted the Japanese concept of happiness and wellbeing. This has been followed in Japan for all many generations. Because of demographic shifts in the population, with increasing numbers of elderly individuals, and with increased elderly population and increasing cost of medical care for the elderly, there is a need to revisit this in the context of would be needed New Lessons of Nurturing Life, especially for the elderly. In the present report, we discussed these New Lessons of Nurturing Life for the self-care dependent geriatric patients who needed both medical and non-medical cares.

How to prevent the need for nursing care

There are many factors that may lessen the need for nursing care and thus contribute to happiness and well-being. An important factor is stroke (Imai et al. 1996). The death rate from cerebral infarction is proportional to an individual’s salt consumption, which averages 12 g/day in the Kansai (Osaka) region to 14 g/day in the Tohoku region north of Tokyo (Fukuoka et al. 2007). Forty years ago, reports showed that the personal salt consumption averaged 16 g/day in Kansai and 26 g/day in Tohoku, and even today the Tohoku tradition of high salt consumption continues (Watanabe et al. 2008).

Along with diet, exercise is an important factor in preventing the need for nursing care (Sasaki et al. 2010; Sasaki et al. 2011); but which is more important: diet or exercise? In this context, data that has been collected on childhood obesity in Japan might provide a useful perspective (Satoh et al. 2011). A study of obese children showed that, surprisingly, they actually ate smaller quantities of food than non-obese children. However, although the non-obese children ate more food, they were also very active and exercised a great deal. By contrast, the obese children spent most of their time playing computer games and watching television, and exercised only rarely. These findings suggest that exercise is potentially more important than diet in promoting a healthy lifestyle. However, exercise becomes progressively more difficult for the elderly (Nagai et al. 2011), due to muscle atrophy and neurologic disorders.

Elderly persons commonly fall (Kojima et al. 2011; Aoyama et al. 2011), in part because they can only lift their toes a maximum of 1 cm from the floor when they walk...
Aspiration pneumonia accounts for 80% of elderly pneumonia patients (Teramoto et al. 2008), and occurs in two forms (Mark 2001). One is silent aspiration pneumonia, and the other is vomiting aspiration pneumonia, which develops when the patient vomits and inhales some of the stomach contents into the lungs. The incidence of vomiting aspiration pneumonia, which accounts for 40% of all aspiration pneumonia, can be reduced by the use of sennoside, to prevent constipation and intestinal obstruction in patients in a geriatric hospital (Takahashi et al. 2012).

The swallow reflex and cough reflex both protect against aspiration (Yamaya et al. 2001a; Yamaya et al. 2002; Nakagawa et al. 1997). Angiotensin converting enzyme (ACE) inhibitors (Sekizawa et al. 1998), amantadine (Nakagawa et al. 1999) and cilostazol (Yamaya et al. 2001b) are effective in the prevention of silent aspiration pneumonia. Substance P mediates the swallowing reflex and cough reflex; capsaicin (Ebihara et al. 1993), capsiate (Yamasaki et al. 2010), black pepper oil (Ebihara et al. 2001) and red wine polyphenol (Ebihara et al. 2010) can be useful in evoking the release of substance P. The temperature within the oral cavity (Watando et al. 2004) and physical stimuli, such as the action of a toothbrush (Yoshino et al. 2001), can also cause substance P to be released. Oral hygiene can reduce pneumonia by 40% in elderly patients who require nursing care (Yoneyama et al. 2002). Pneumonia occurs less frequently in elderly persons who have been inoculated with BCG vaccine and convert to a positive response in the tuberculin skin test (Nakayama et al. 2002). Some might say that pneumonia prevention is simply postponing the inevitable. However, medical expenses are lower for the elderly who have a long healthy life than for those whose lives are shortened by illness (Nakajoh et al. 1999).

Elderly patients who eat little, cannot give meaningful spoken responses, and are bedridden with three episodes of pneumonia have a mean survival of 6 months, even when tube-fed during the end stage of life (Kosaka et al. 2012). In aged-care facilities, when the initiation of tube feeding was being discussed, if the question was phrased as, “Ninety percent of people say they would not want this procedure; do you want to go ahead with it?” the number of people who selected tube feeding dropped to half (Kosaka et al. 2005). In Japan today, 70,000 people are tube-fed each year, including 60,000 elderly patients who require nursing care. With tube feeding, the elderly generally survive for 14 months at a medical treatment cost of 9 million yen. With parenteral nutrition rather than tube feeding, survival time is 2 months at a cost of 1 million yen. That difference between tube feeding and parenteral nutrition works out to have an economic impact of 240 billion yen. It will be necessary to think carefully about medical treatment for the elderly who require nursing care when establishing control policies (Finucane et al. 1999).

**Single pathogenesis of geriatric syndrome**

Even if a person focuses on living in a way that will minimize the need for nursing care, the organs typically show a roughly linear decrease in function with age; the upper limit for human life seems to be approximately 100 years (Ohru et al. 2003). This age group is much more likely to have multi-organ failure termed geriatric syndrome (Freeman et al. 2010). Each organ can be treated by specialists, but even if one organ recovers, the other organs remain damaged and the patient is then referred to another specialist, leading to an endless cycle with a large number of factors causally related to geriatric syndrome (Fukai et al. 2010; Yoshida et al. 2011; Okada et al. 2010). For example, aspiration pneumonia cannot be prevented by antimicrobial agents; falls generally occur because of brain dysfunction related to lifestyle diseases, such as hypertension and diabetes (Katsumata et al. 2011), or even because of loss of functional teeth (Yoshida et al. 2005).

There is considerable concern these days about the increasing cost of medical care for the elderly (Yang et al. 2011). It would be better to assume that multiple organ failure has a single pathogenesis, to look for the root cause among the variety of presenting symptoms, and to minimize drug use (Sasaki 2008). This is why geriatric medicine should be established as a specific department within the Japanese medical system (Shah et al. 1997). On the 50th anniversary of universal health coverage in Japan, a special series in Lancet commemorated the achievements of the Japanese system, including medical care for the elderly, and discussed the problems that must be resolved in the future (Editorial 2011).

**Behavioral Psychological Symptoms of Caregivers**

The loss of memory that accompanies advancing age has been treated with donepezil (Rogers and Friedhoff 1996; Kanaya et al. 2010; Na et al. 2011) and a variety of other medications (Raina et al. 2008; Muangpaisan and Brayne 2010; Van Puyvelde and Mets 2011), but with limited effectiveness. Among the ACE inhibitors, those that can cross the blood-brain barrier have been associated with a decrease in the onset of Alzheimer’s disease of up to 25% that seen with other antihyptensives (Ohru et al. 2004a). In addition, after the onset of Alzheimer’s disease symptoms, ACE inhibitors that were able to pass through the blood–brain barrier inhibited the loss of cognitive function
In most cases, medical care for dementia focuses on the treatment of the behavioral psychological symptoms of dementia (BPSD), such as violence, verbal aggressiveness, wandering, poor personal hygiene and resistance to care or assistance (Cipriani et al. 2011). Today, BPSD is treated by the use of psychotropic drugs to suppress symptoms (American Psychiatric Association 1997). However, those psychotropic drugs are associated with high levels of adverse drug reactions, such as falls and pneumonia (Ballard et al. 2009; Gills et al. 2007; Akihisa et al. 2011). Psychotropic drugs are even sometimes used to treat ordinary memory loss, stress-induced insomnia (Assantachai et al. 2011) and depression (Mizukami et al. 2010). The use of such drugs to provide “dementia treatment” might cause cognitive function to be considerably reduced, in some cases down to zero (Azumi, et al. 2011).

It is true that BPSD symptoms can often be controlled by the use of psychotropic drugs. But regardless of how much the caregiver does, the elderly person is trapped in a timeless state of non-responsiveness, and the caregiver loses heart. Memory loss associated with aging can frequently cause the elderly to forget times, places, and people. They might have delusions that someone has stolen their money, for example, and complain to their primary caregiver (Hsu and Tung 2011). If the caregiver argues, “Why would I do that?”, the elderly person may feel, “My caregiver hates me; we are like enemies,” and this will cause BPSD to become worse. Instead, if the primary caregiver is sympathetic and says, “Oh dear, let’s look for it together,” the elderly person will soon forget about the money, but will remember the kindness. This leads to increased trust of the primary caregiver. In this way, BPSD can be greatly influenced by the behavioral psychological symptoms of caregivers (BPSC) (Fujii et al. 2010). When we reach this point, it clearly becomes necessary to use methods that will lead away from the need for nursing care (Snowdon 2011).

Overall care of the elderly

There are three broad categories by which to frame issues in the context of overall care elderly. These are the concept of balanced aging, non-pharmacologic care, and Buddhist wisdom in geriatric medicine. Below we describe the important features in each of these, in light of which doctors and caregivers alike should pay attention to the pathogenesis, and to treat the patients according to the request and desires of the patients and their families.

Balanced Aging

Brain functions fall into the broad categories of the neocortex, which handles knowledge, reason, and rationality, and the limbic system, which handles instinct, emotion, and passion. The instincts that boil up from the limbic system are suppressed by reason in the neocortex, which helps to keep people functioning appropriately, and avoiding trouble. The limbic system supports a desired objective, and the neocortex becomes a tool by which to realize that goal. Just as in mountain climbing or some other adventure, original research often depends more on the intuition and passion of the limbic system than on the rational pathways dictated by the neocortex (Fujii and Sasaki 2009).

Even after memory is lost, BPSD remains. This suggests that the limbic system function is relatively well-retained. The application of pleasant sensory stimuli might help the person to avoid BPSD outbursts. Sensory stimuli might involve aromatherapy using pleasant fragrances, such as lavender (Fujii et al. 2008) and coffee (Matsuda et al. in press), touch therapy including footbaths and massage (Kudoh et al. 2009; Kudoh et al. 2010; Fukuoka et al. 2011), and watching family videos together on DVD (Hatakeyama et al. 2010). Sometimes the elderly person might even say “thank you” for the pleasant stimulus. To stimulate the limbic system by awakening emotions not only improves BPSD, but also might encourage some recovery of cognitive function (Ko and Youn 2011).

In Europe and the USA, the term “successful aging” has been proposed as a strategy to prevent the need for nursing care (Rowe and Kahn 1997). “Successful aging” means rigorous maintenance of mental and physical health, so that the elderly will be able to contribute to their community right up to the end of their lives. Unfortunately, only a few actually achieve successful aging.

The 80/20 movement in Japan advocates for oral health, and promotes the retention of 20 or more teeth by the age of 80 (Ministry of Health, Labor and Welfare 2010). Most of the very elderly can only manage a restricted diet of soft, easily digestible foods. They can generally handle this food without problem at the age of 80 years if men have at least 10 functional teeth remaining, and women have at least 6 (Fukai et al. 2011). If the elderly retain sufficient functions to meet their objectives, they can live comfortably. As the neocortex atrophies with age, and organic dysfunction develops, balanced aging can be achieved by recognizing the differences between youth and old age, and using limbic system objectives that are suited to the processes of neocortical and organic degeneration (Butler et al. 2011). In this way, life can remain satisfying, even with considerable loss of function.

In cases of extreme neocortical atrophy, such as dementia, the patient can often smile or chuckle when the limbic system receives a pleasurable stimulus. Balanced aging means satisfaction for all of the elderly, regardless of whether they have physical dysfunction or whether their aging is “successful” or not. Even someone who is bedridden can smile and enjoy life if the limbic system is happy and satisfied. When balanced aging is maintained, QOL is high. In extreme cases of dementia, the loss of the neocortex is not particularly important. It is the limbic system that determines the quality of life.
We find that the elderly are happiest when living as part of a multigenerational family (Kudo et al. 2007). Happiness is somewhat lower in elderly couples living in a two-person household, still lower in the elderly who require nursing care, and lowest in those who live in nursing homes. However, “living with family” is not always a simple solution. Since the Care Insurance took effect, an increase has been seen each year in the number of elderly beneficiaries who are killed by their primary caregivers within their household (Ohrui et al. 2005).

Some authors report that, if an elderly person has lived happily with a primary caregiver before needing nursing care, that happy relationship can often be successfully continued even after nursing care becomes necessary (Kodama et al. 2007). However, if the relationship with the primary caregiver was not good previously, and the elderly person only asks for help after the need for nursing care develops, it is then too late to build a solid foundation, and the patient will soon be moved to an institutional care facility (Kodama et al. 2009). Therefore, there are some limitations in care for which family members are responsible.

It is not uncommon for patients to suffer both from dementia and cancer (Nakayama et al. 2010). When cancer is complicated by dementia, both chemotherapy and hospice care become unfeasible (Kumar et al. 2007). However, in late-stage cancer, the development of dementia can even be an advantage, as the patient does not suffer or complain of intolerable pain. There have been elderly patients with colon cancer in which an endoscopic observation showed pinhole obstruction in the colon, so the patient was placed on a fasting regimen, and death was actually hastened by factors such as the use of physical restraints or psychotropic drugs. In contrast, with a less “cure-centered” approach, QOL can be maintained by meeting the needs of the limbic system, even in patients with fatal cancer who are experiencing loss of organ function (Kosaka et al. 2010).

Non-pharmacological Care

The limbic system cannot experience joy or happiness under pharmacocentric medical care. Of course, even minimal drug therapy will include essential treatment for conditions, such as pneumonia, infection, cerebrovascular disease and cardiac insufficiency (Sakurai et al. 2010), but when we try to handle all disabling conditions in the elderly by medical care alone, treatment is of only limited effectiveness. Non-drug therapy can be administered by caregivers and family members, rather than being limited to medical practitioners in self-care dependent geriatric patients (Kikutani et al. 2010).

It is important to point out that focusing on non-drug therapy in the elderly does not mean that traditional medical care will be abandoned or withheld. However, rather than continuing with ineffective therapy to the end, it seems reasonable to take a positive therapeutic approach by using non-drug therapy to make the limbic system happy and satisfied, and to maintain balanced aging (Ishizuka et al. 2012). Associated with this shift in focus is the observation that non-pharmacocentric therapies are often less expen-

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**Buddhist wisdom for geriatric medicine**

![Fig. 1. Suffering as associated with birth, sickness, aging, and death in Buddhist teachings. Buddhist Wisdom describes how to relieve affliction; spiritual training to resolve cause and effect relationships, and let go of the self, thus freeing one and free suffering by realizing nothing being permanent. Comparing the perspectives of geriatric medicine and the kind of medical treatment that is in wide use today, we suggest that geriatric medicine stands along with Buddhist Wisdom, while medical treatment stands far from Buddhist Wisdom. See text for further explanation.](image-url)
sive, helping to keep down the serious costs of care for the elderly. This also brings down costs.

When we look around us at society today, we see that people are constantly ranked by their neocortical function. Children are ranked by their test scores, and when people finish school and join the workforce, they are ranked by how much money they have. These issues lead to numerous social problems, including bullying, school refusal, inability to get a steady job, failure to marry, falling birth rates, depression (Miu and Chan 2011) and suicide (Dimirgin et al. 2011). Even the elderly are ranked as sick or healthy based on the performance of the neocortex. If we assume that the limbic system plays an important role in the treatment of dementia, then a day spent basking in the sun on the porch, with friends and neighbors coming and going, can be a very good day, regardless of whether the elderly person remembers who came by. Clearly, a society that places its primary emphasis on the neocortex is mistaken.

**Buddhist Wisdom in Geriatric Medicine**

The basic norms of humanity have not changed much over the last thousand years, and Buddhism provided the basis for Japanese thought. The Buddhist response to the question of why we suffer the affliction of the four inevitabilities in human life (birth, sickness, aging, and death) would be to consider the cause-and-effect relationship that is at the root of suffering (Fig. 1). Spiritual training is required in order to resolve this cause-and-effect relationship; such training results in the realization that all things change and nothing is permanent. It is best to let go of the self. When we are no longer attached to material things, we will be free from suffering (Shizuka 2009).

If these teachings are applied to geriatric medicine, the cause-and-effect relationship can be explained as a single primary pathogenesis. BPSC can be seen as lack of appropriate BPSC, so it is important to train caregivers to be sympathetic and compassionate toward patients. If we view a neocortex-centered life from the Buddhist perspective of impermanence, the losses associated with aging seem only natural. Even if the neocortex, material possessions, and money are lost, the elderly patients can still experience satisfaction through a life centered on the limbic system that promotes enjoyment and happiness. Geriatric medicine should place its primary emphasis on balanced aging. In order to achieve this balanced aging, it is important to limit drug therapy and to promote alternative therapies that are not pharmacologically based.

If the kind of medical treatment that is in wide use today is applied to geriatric medicine, considerations of cause and effect will lead to the treatment of individual organ systems. Doctors spend a great deal of time training in medical technology, but they try to achieve the medical objective of mental and physical health in patients. Medical science pursues successful aging and is now even trying to prolong life through genetic engineering (Herbig et al. 2006). This approach creates a serious contradiction for geriatric medicine. Our modern model of medical treatment is appropriate for young people, but it is not well-designed for the needs of the elderly.

**Conclusion**

In *Lessons of Nurturing Life*, Kaibara Ekiken (1630-1714), describes the Japanese concept of “hara hachibu” (eating only until the stomach is 80% full). The objective of *hara hachibu* is not simply to avoid obesity and lifestyle-related diseases, or to have a long healthy life, but also to control desire. Even in extreme conditions, such as dementia, considered from the perspective of balanced aging, modern society demands that we not simply abandon those persons whose tools have weakened (Kubo et al. 2005), but rather grant them the respect and deference that is their due, and do everything in our power to promote happiness and wellbeing in the aging population.

**Conflict of Interest**

We declare no conflict of interest.

**References**


New Lessons of Nurturing Life


