Centenarian adj

One of the most fascinating phenomena of population aging is the exponential growth in the number of centenarians. As of 2000, the count of remarkable individuals who have lived to be 100 years of age and older tallied more than 50,000 in the United States, a number projected to reach 214,000 in 2020 and 834,000 in 2050. Even though demographic statistics on centenarians are often challenged by the inaccuracy of the data, the growth of centenarians is evident in all industrialized countries. Owing to the dramatic increase in the number of persons over 100 years of age, studies are focusing on the longevity characteristics of super-centenarians (those who are over 110 years of age) and semi-super-centenarians (those who are over 105 years of age). The increase of centenarians has important social and economic implications for our society, including reconceptualization of age and aging and modification of social policies and services. Also, centenarians—the survivors of the human species—provide a unique opportunity to explore human aging and longevity from the perspective of the relative contributions of nature (genetics) and nurture (environment, nutrition, activities, psychosocial, and behavioral aspects) as well as their interactions. From this perspective, cross-cultural comparisons of factors contributing to longevity are especially important.

Centenarians today were born at the turn of the 20th century, experienced numerous historical events (e.g., World Wars I and II, the Great Depression, President John F. Kennedy’s assassination, the first moon landing) in their younger years, and celebrated their 10th decade of life at the new millennium. Given that the life expectancy at birth in 1900 was 48 years, today’s surviving centenarians are extraordinary individuals who have lived twice their expected time. Globally, the official human longevity record is held by the French woman Jeanne Calment, who died in 1997 at 122 years of age. With increased average life expectancy and medical advancement, survival curves of populations have become rectangularized and more individuals are approaching the potential human life span.

Most studies of centenarians can be characterized as descriptive prior to the 1980s. Systematic studies of genetic, biological, and behavioral influences have increased exponentially during the past two decades. Recent studies have reported on centenarians in the United States (Georgia and New England), Sweden, Denmark, France, Germany, Italy, Sardinia, Japan (Tokyo and Okinawa), Korea, and other countries.

One of the most striking characteristics of centenarians is the disproportionate gender ratio. The general tendency of female longevity becomes more pronounced during extreme old age. This ratio varies from four to six females to one male. A majority of centenarians (> 80%) are also non-Hispanic
Whites. During the next few decades, however, the racial/ethnic composition of centenarian populations will change profoundly. J. C. Day’s study of U.S. population projections in 1996 indicated that the number of centenarians of color will grow faster than that of non-Hispanic Whites. This projection suggests the importance of understanding cultural and ethnic characteristics of older minorities to properly respond to their needs. Centenarians are more likely to have lower educational attainment and unmarried status and are more likely to live alone compared with other cohorts of older populations. Approximately half of centenarians are reported to live in nursing homes.

Leonard W. Poon and colleagues showed with their 2000 study that the survival patterns of four groups of centenarians by gender (male or female) and race (African American or non-Hispanic White American). They charted the number of days of survival after reaching 100 years of age among 137 centenarians who were part of the Georgia Centenarian Study. The champion survivors were the African American females, followed by non-Hispanic White American females and African American males. The gender difference in survival during the first 2 years was not significantly different; however, the difference was significantly pronounced after 3 years in favor of females. Both gender and race were associated with survivorship, with African Americans showing longer survival times than White Americans. Racial mortality crossover effects were shown to be clear at the extreme old age. This crossover effect is an important and worthwhile research question for future explorations.

A wide range of individual difference in physical function and disease profile is apparent in centenarians. Some centenarians are extremely mobile and functionally independent, whereas others suffer comorbidity resulting in frailty and dependency. In the New England Centenarian Study, approximately 35% of the sample of centenarians were free from functional disability and a majority (close to 90%) had been functionally independent up to 90 years of age. The prevalence of age-related diseases, such as cancer, heart disease, and diabetes, was significantly lower among centenarians than among younger older adults. In the centenarian data from Japan, Sweden, and the United States, the prevalence rates of dementia range from 40% to 63%. Findings from various studies clearly indicate that decline in physical and cognitive function is not inevitable with aging.

The Georgia Centenarian Study showed age differences in intelligence among nondemented adults in their 60s, 80s, and 100s. Centenarians performed significantly worse on average than did octogenarians and sexagenarians in learning new information and retrieving familiar information as well as on tests of intelligence such as vocabulary, block design, arithmetic, and picture arrangement. The exception was in everyday problem solving, where cognitively intact and community-dwelling centenarians performed as well as the younger groups. In general, the magnitudes of age differences were smaller in crystallized intelligence (e.g., information contained in the lexicon such as vocabulary) than in fluid intelligence (e.g., learning new information such as paired associate learning). Education was found to have a profound positive effect in mitigating the level of performance differences between individuals, especially among centenarians.

Research on personality characteristics of older populations shows that centenarians are less likely to be energetic and open but are more likely to be introverted, easygoing, and relaxed. When dealing with stressful life situations, centenarians are known to use cognitive coping strategies rather than active behavioral coping. A study using the Georgia Centenarian data showed an interesting age variation in mental health consequences of physical health problems. Although centenarians had greater levels of disability and disease, their subjective perception of health and mental health status were less likely undermined by their health problems when compared with the younger old in their 60s and 80s. Given
that individuals evaluate self and situations through social comparisons, the adverse effects of health problems may be lessened for centenarians, whose age peers have a higher prevalence of health problems and mortality rates. It is also suggested that centenarians have differential expectations and perspectives of life as well as lowered reference points based on realities of advanced old age. Centenarians are more likely to consider disability and disease as changes that occur with aging rather than as health problems; thus, these conditions are more acceptable to them. Also, due to their lifetime experiences, centenarians may have advantages in dealing with life stresses. They may have developed efficient personal coping strategies and so may be more adapted to their adverse health conditions than are their younger counterparts. Finally, centenarians may be benefiting from selective survivorships. Their special status as survivors beyond the expected life span may bolster the psychological state of centenarians and help them to make positive evaluations of themselves. These psychological assets and coping strategies may be sources of emotional strength and resilience for centenarians.

Increasing research on centenarians is promising because the traditional categorization of older adults (integrating those age 60 or 65 years and older into a single group) has concealed the diversity within older populations that span more than 40 years of life. As the literature indicates, individual variation or diversity is the key characteristic of centenarians, and this feature will become more pronounced in the future. Diversities indicate that people with various backgrounds become centenarians and that there are multiple paths to living beyond the average life span. With their growth in numbers and diversified characteristics, centenarians have yet to be explored. From this perspective, studies of similarities and differences in longevity predictors from different cultures, as well as contributors to genetic and environment interactions for longevity, will be important next generations of centenarian research. The search for answers to human longevity and survival will continue.

See also
Demography of Aging; Longevity; Oldest Old; Twin Studies

Further Readings and References

Leonard W. Poon

https://search.credoreference.com/content/topic/centenarians
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Harvard

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