



## Aging with Disability in Korean Polio Survivors : Trends in Function and Economic Status, 2008–2023

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### PURPOSE

- Polio is no longer a newly occurring infectious disease in South Korea. However, individuals who survived polio during the 1950s–1960s continue to age as a fixed cohort.
- Unlike progressive neurological disorders, this population does not increase in number but instead ages together over time. As this cohort grows older, important questions arise regarding economic sustainability and functional independence in later life.
- Understanding the long-term socioeconomic and functional trajectories of polio survivors is important for developing policies that address the needs of people aging with long-standing disabilities.

### METHODS

- This study used data from the Korea National Survey on Persons with Disabilities (2008–2023), a nationally representative survey conducted periodically by the Korean government.
- A total of 984 individuals with polio-related disabilities were identified and analyzed across six survey waves (2008, 2011, 2014, 2017, 2020, and 2023).
- We examined longitudinal trends in economic status and functional independence among Korean polio survivors. Key variables included household monthly income, sources of income (e.g., labor income and public transfer income), and dependence in activities of daily living, including basic activities of daily living (ADL) and instrumental activities of daily living (IADL).
- Descriptive statistics were used to summarize demographic characteristics, while trend analyses across survey waves were conducted to examine changes in economic status and functional dependence over time.

### RESULTS

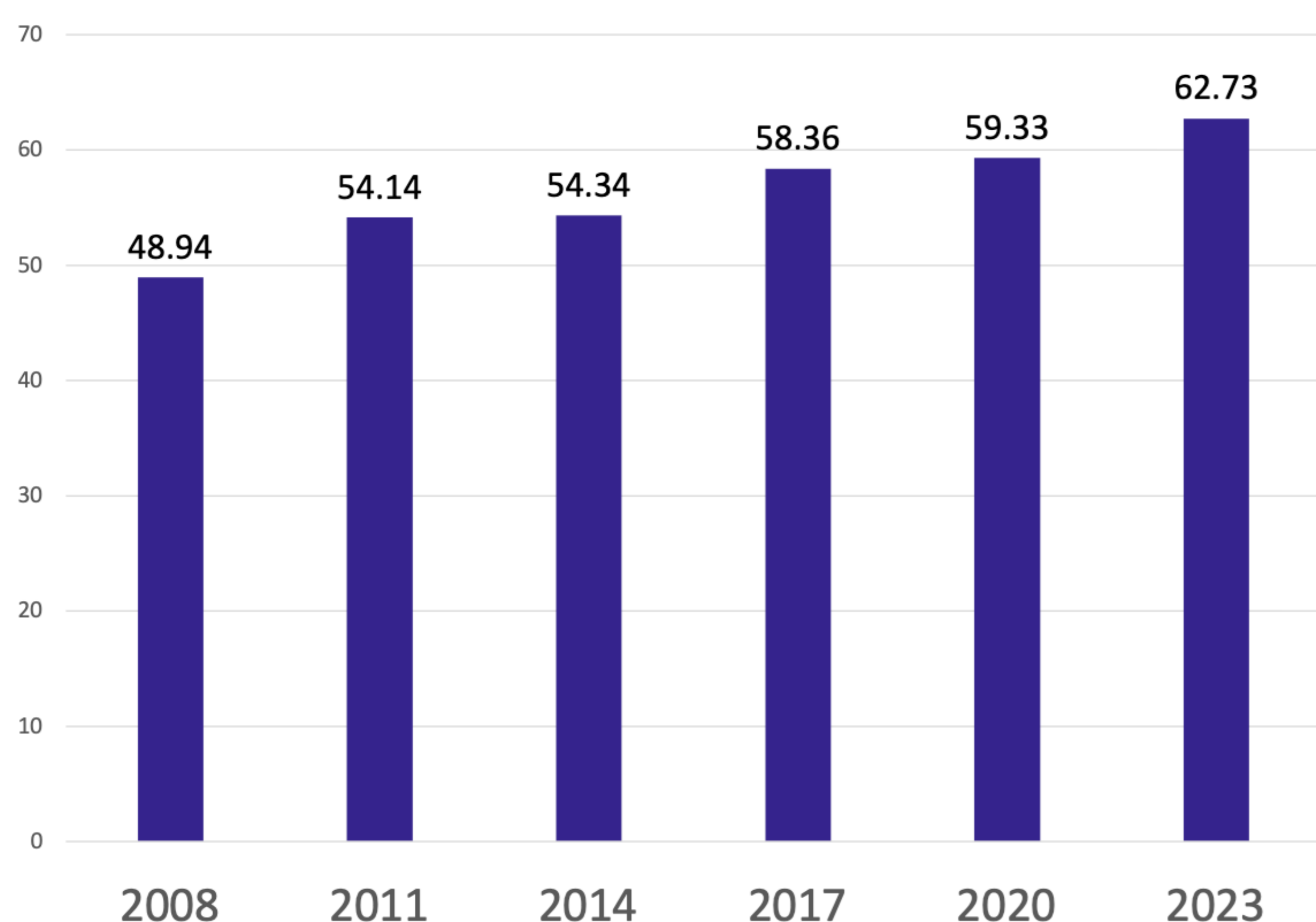


Figure 1. Mean age of Korean polio survivors by survey wave, 2008–2023

- The sex distribution remained relatively stable across survey waves, with males slightly more prevalent in most periods. The distribution of disability grades changed significantly over time ( $p < .001$ ). Earlier waves showed relatively higher proportions of severe disability grades, whereas later waves showed an increasing proportion of moderate disability (Grade 3). By 2023, Grade 3 accounted for the largest proportion (36.2%), followed by Grade 2 (22.4%).
- Clear evidence of rapid cohort aging was observed over the study period. The mean age increased steadily from 48.9 years in 2008 to 54.1 in 2011, 54.3 in 2014, 58.4 in 2017, 59.3 in 2020, and 62.7 years in 2023, indicating that Korean polio survivors are aging together as a fixed cohort transitioning into older adulthood.

Income Cliff vs. Rising Functional Dependence (2008–2023)

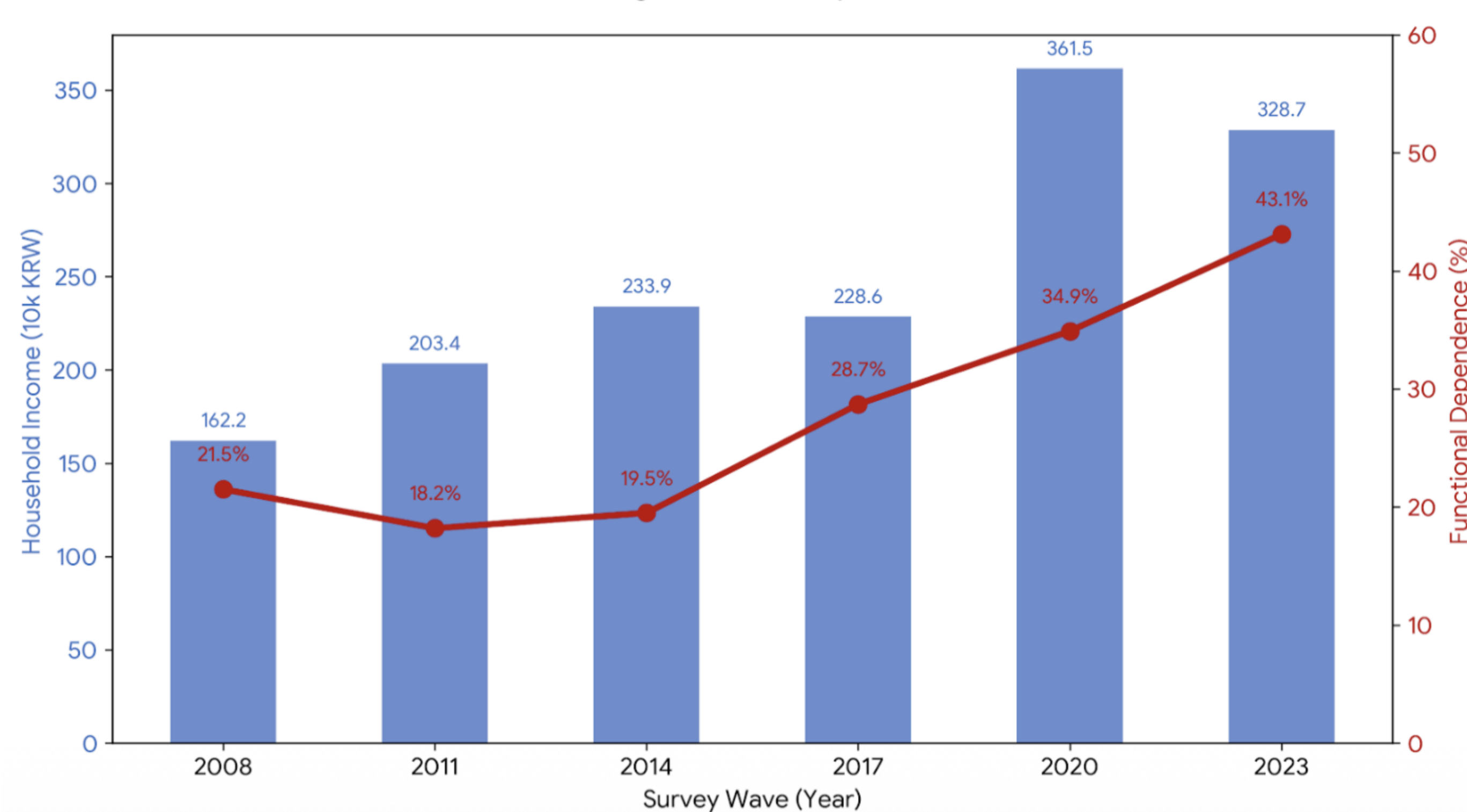


Figure 2. Trends in household income and functional dependence among Korean polio survivors, 2008–2023

- Average monthly household income (10,000 KRW) rose from 162.2 in 2008 to 203.4 in 2011 and 233.9 in 2014, followed by 228.6 in 2017, and then increased further to 361.5 in 2020 and 328.7 in 2023, suggesting overall improvement in economic indicators.
- However, despite this increase in income, functional independence declined during the same period. The proportion of individuals requiring assistance in daily life increased from 21.5% in 2008 to 18.2% in 2011 and 19.5% in 2014, then rose sharply to 28.7% in 2017, 34.9% in 2020, and 43.1% in 2023.
- These findings indicate that while economic resources have improved, functional dependence has increased substantially among Korean polio survivors, suggesting a widening gap between economic indicators and functional capacity in this aging disability cohort and highlighting the growing care needs associated with aging with long-standing disabilities.

### CONCLUSION

- Although polio is no longer an active public health threat, its survivors represent a rapidly aging fixed cohort experiencing a dual burden: increasing functional dependence and growing reliance on social transfer income.
- These findings highlight the structural challenges faced by individuals aging with long-standing disabilities across the life course.
- Policy responses should move beyond traditional disability stabilization models and adopt aging-with-disability frameworks that integrate long-term care, income security, and community-based support systems.