

Inequalities in Kin Death over the Life Course

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Abstract

Kin availability and kin loss over the life course are important, but understudied, sources of inequality in human societies. First, relatives provide crucial support in the form of financial and non-financial transfers. Second, exposure to kin death has been linked to negative outcomes in the long term. However, we know very little about the experience of kin death over the entire life course of individuals. Here, we use a unique data source, the China Health and Retirement Longitudinal Study, which includes complete demographic information on a representative sample of the Chinese population, and members of their nuclear and extended families. We document the patterns of kin loss in China across individuals' life courses and over time. Our results highlight the persistent inequalities in the exposure to kin death in China, especially across socio-economic and ethnic lines.

1 Introduction

Humans die only once but they can experience death multiple times in the course of their life through the death of a loved one. Offspring death, for example, has been a common life-event historically (Volk & Atkinson, 2013) and continues to be a reality for millions in countries of the Global South (Smith-Greenaway et al., 2021). Differential exposure to death has been recognized as an important source of inequality (Umberson et al., 2017) as losing a family member is associated with a range of negative outcomes (Patterson et al., 2020; Fletcher et al., 2013; Doku et al., 2020). However, there are currently no studies documenting the distribution of kin death over an individual's life course.

Recent work in the demographic literature has highlighted that lifespan inequality is experienced as uncertainty around the timing of death by individuals (van Raalte et al., 2018). Individuals in populations with higher levels of lifespan inequality can be, on average, less certain about the timing of their own deaths. Livi Bacci (1997) has proposed the notion of a 'natural hierarchy' in the timing of deaths such that, for example, members of older cohorts expect to live longer than members of younger cohorts. We can expand this to kin ties to say, for example, that grandparents generally expect to die before their grandchildren. Nevertheless, in settings with more heterogeneity in the timing of kin death over an individual's life course, individuals would perceive a higher number of kin deaths as 'untimely' and inconsistent with an internalized hierarchy in the timing of deaths. There are currently no studies focusing on the distribution of kin loss over an individual's life course while it is an important source of various types of inequalities, such as income or wealth inequality. Kin inequality could also be considered as the ultimate form of inequality given the importance of extended families, not only for material reasons but also for companionship and emotional support. First, relatives provide crucial support in the form of financial and non-financial transfers. Second, exposure to kin death has been linked to negative outcomes in the long term.

This paper documents the patterns of kin loss over the life course and how they have changed over time across different groups and regions. It also highlights the inequalities and changes in the timing of events over the life course.

The data used in this study is a unique panel data set that recorded the entire life history of the respondents from the China Health and Retirement Longitudinal Study. The survey documented the information not only on the status of the family member, but it also asked for detailed questions on the exact year each family member entered an individual’s life and exited (passed away), the reasons for the deaths along with other socio-demographic characteristics. It is a source of unmatched richness for studying individuals’ exposure to death. Furthermore, China is ideal for studying the heterogeneous bereavement experience in the course of people’s lives and the inequality associated with it. China is the largest country in East Asia. The country has experienced rapid demographic change - life expectancy increased from 66 years to 77 years between 1990 and 2018, while the fertility rate dropped from 2.3 to 1.7, partially due to the one-child policy and various mortality crises, such as famines that affected millions of lives. As a result, China’s population is aging faster than almost all other countries in modern history. It enables us to explore kin death under the context of population aging. While this pattern is similar to that in other countries like Japan and Germany, the rapid economic growth over the past two decades increases the inequality sharply and renders China among the most unequal countries in the world.

The rest of the paper is organized as follows. Section II presents the data. Section III describes the methodology and preliminary results, and Section IV discusses the future work.

2 Data

The sample is a panel of individuals aged 1-100 drawn from a special life history wave from China Health and Retirement Longitudinal Study (CHARLS) in 2014. CHARLS is a nationally representative Chinese household survey of individuals aged 45 years or older and their spouses. The first wave of CHARLS in 2011 interviewed 17,587 respondents in 10,257 households. The data team followed up with the same individuals every two years and has published four waves of data so far (2011, 2013, 2015, and 2018).

CHARLS Life History is a special wave that collected information not only on the respondents’ demographic background, financial status, health and working history, but also their childhood environment and family members’ basic information, such as the date of birth, death and their relationship with the respondents. This valuable information enables us to study individual’s experience of losing their family members throughout their life course.

3 Methods and Results

3.1 Age-specific rate of kin loss

We define the ‘Crude kin loss rate’ (CKLR) to summarize the experience of kin loss over an individual’s life course. The numerator is the sum of all kin deaths of relative ‘r’ experienced by all persons born in year ‘c’ during age ‘a’. For example, this could be the total number of children lost by individuals born between 1950-1955 experienced when the bereaved parents were aged 15-20 (‘a’ and ‘c’ can be single years or year intervals). The denominator is the sum of all individuals aged ‘a’ born in cohort ‘c’. The KLR considers only individuals at risk of losing relative ‘r’ in the denominator: As such, it is a crude measure because not all of the individuals included in the denominator were at risk of losing a child (e.g., many were not parents):

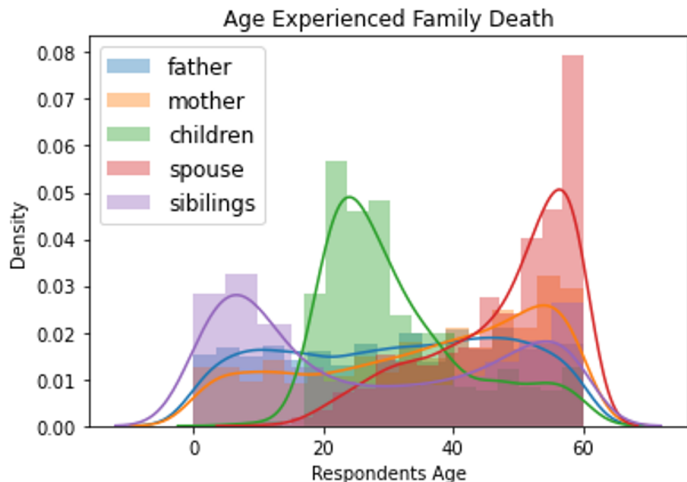
$$CKLR = \frac{\text{sum of kin deaths of relative 'r' for people aged 'a' of cohort 'c'}}{\text{people aged 'a' of cohort 'c'}}$$

In our example, this would be only those individuals born in cohort ‘c’ who had a living child at age ‘a’. The same logic applies for estimating the denominator for other relatives types (parents, siblings etc.).

3.2 Inequalities in kin death over the life course

Kin loss patterns vary across types of family members. In Figure 1 we plot the density (rather than frequency) of *CKLR* for respondents' biological father, mother, children, spouses, and siblings at each age of the respondents. It displays individuals' life experiences about deaths until the age of 60. We find that the parents' deaths tend to spread out over the life course, while children's death occurred more frequently in the respondents' early 20. Siblings' deaths occurred more before the age 5, and spouses' deaths occurred more at the end of the age cutoff.

Figure 1: Respondents' Age Experienced Family Members' Deaths



3.3 Inequalities over time and by ethnicity

We observe heterogeneity in 'natural hierarchy' in the timing of deaths across households with different demographic backgrounds. This implicitly suggests a level of inequality in the lived experience of death. We defined 'natural hierarchy' or orderly death as the younger cohorts ought to live longer than older cohorts. In our content, respondents would experience of losing their parents before losing their peers, like siblings and spouse and lastly their children. Otherwise, we define it as a disorder.

The disorderly sequence of death is consistently found in individuals that are in the minority groups and with lower household income, as shown in Figure 2 - 5. For example, Figure 2 shows that 51% of minority respondents in the birth cohort between 1934 - 1939 suffered disorder deaths, compared to 44% of the majority groups. Similarly, almost half of the individuals from lower household income families had experiences of the disorder deaths, compared to 39% in their counterparts. Even though the disorder decreased over time, the gap between the two groups remains, shown in the younger cohorts 1950 - 1954 in Figure 3 and Figure 5.

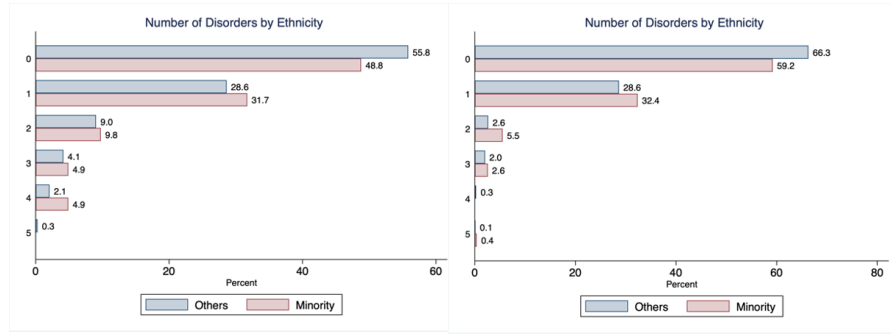


Figure 2: Ethnicity: 1934 – 1939

Figure 3: Ethnicity: 1950 - 1954

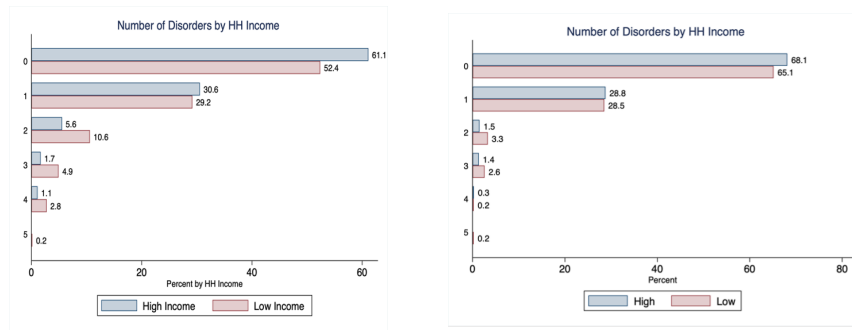


Figure 4: Income: 1934 – 1939

Figure 5: Income: 1950 - 1954

4 Future work

Our preliminary results indicate a potential fall in the inequality on the exposure to death over time. In the future, we will explore how a demographic transition in the sense of changing demographic rates would lead to a kinship transition and what the main determinants of kin death are.

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