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Introduction

A positive association between socioeconomic status (SES) and health has been well documented in different populations (Cutler et al. 2011; Elo 2009). In this literature, SES is typically measured by such objective indicators as educational attainment, personal or household income, and occupational status (Elo, 2009). A growing body of research has focused on the predictive power of subjective social status (SSS) – that is, self-perceived position in a social hierarchy, for health (often measured as self-reports of general health status) above and beyond objective SES, at least in certain Western subpopulations. Early examples include British civil servants (Adler et al. 2008; Singh-Manoux et al. 2003; Singh-Manoux et al. 2005), pregnant U.S. women (Ostrove and Adler 2000; Reitzel et al. 2007), low-income Mexican-origin residents in Texas (Franzini and Fernandez-Esquer 2006), older adults from Wisconsin (Garbarski 2010), and community dwellers in British Columbia, Canada (Veenstra 2005).

Over the last two decades, this line of research has gradually expanded to other populations such as Finnish adolescents (Karvonen and Rahkonen 2011), middle-aged Hungarians (Kopp et al. 2004), Scottish working men (Macleod et al. 2005), Japanese adults (Sakurai et al. 2010), child caregivers in Shanghai (Rarick et al. 2018), and older adults in Hong Kong (Cheng et al. 2002), Taiwan (Collins and Goldman 2008; Hu et al. 2005), and Indonesia (Nobles et al. 2013). More recently, a cross-nationally comparative study has confirmed a positive relationship between SSS and self-rated health in adult populations from 29 countries, after adjusting for education, household income, and occupational prestige (Präg et al. 2016).

Despite its progress, the literature on SSS and health has several limitations. First, many studies hypothesize a causal pathway linking SSS to health in theory, but their empirical analyses rely on cross-sectional data and hence are subject to the potential issue of reverse causality. In a handful of studies where longitudinal data are available, there is evidence of a reciprocal relationship between SSS and health in the U.S. (Garbarski 2010), Taiwan (Collins and Goldman 2008), and Indonesia (Nobles et al. 2013), despite opposite findings in England (Singh-Manoux et al. 2005) and Scotland (Macleod et al. 2005). Second, prior studies have been primarily concerned with assessing the robustness of the relationship between SSS and health, above and beyond, objective measures of SES in different populations. Several mechanisms linking SSS to health have been proposed but rarely tested in empirical research.

Capitalizing on nationally representative data from the 2010-2016 China Family Panel Studies (CFPS), we examine the prospective association between SSS and self-rated health in Chinese adults over a 6-year follow-up period. China is a perfect setting for studying health inequalities because not only is SES inequality growing dramatically (Xie et al. 2013) but the effects of different SES dimensions on health are evolving. For example, human capital and economic factors are increasingly influential (Xie and Wu 2005), although political capital and historical institutions persist as strong determinants of social stratification (Xie and Wu 2008) and health (Xu and Xie 2017). Moreover, given China's rapid social transition and economic growth, SSS may be a more accurate indicator of SES (Chen and Williams 2018) and a superior predictor of health over conventional measures of SES (Rarick et al. 2018).

Health is a multidimensional concept, encompassing not only physical health but also psychological health, social relationship well-being, and quality of life (The WHOQOL Group 1998). We focus on self-rated health as the health outcome for both theoretical and empirical

reasons. Theoretically speaking, when asked to self-evaluate their general health status, individuals may draw on not only objective clinical or physiological information but also subjective information about functional status, disability, symptoms, and sensations that is only known to themselves (Jylhä 2009). Such a complex cognitive process of health assessment and its product – self-ratings of health – reflect the multidimensional nature of health. Empirically speaking, similar to many studies of SSS and health, self-rated health is the most feasible measure of adult health in our data.

We first examine whether or not a longitudinal association exists between SSS and self-rated health in Chinese adults, after taking into account the standard indicators of SES (i.e., education, income and occupation). The longitudinal data allow us to ameliorate, though not fully address, the concern about reverse causality that is increasingly evident in the literature on SSS and health. Using rich measures of SES at the individual-, spouse-, and household-level in the CFPS data, we then test to what extent this longitudinal association can be explained by two hypotheses. The measurement hypothesis posits that SSS is a "cognitive average" of objective SES markers, allowing an individual to make a more nuanced judgment of his/her multidimensional socioeconomic circumstances and related life chances (Singh-Manoux et al. 2005). The social hierarchy and health hypothesis suggests that SSS reflects favorable or unfavorable comparisons in the social hierarchy which affect psychological health and, in turn, physiological functioning and health through a psychosocial pathway (Wilkinson 1999, 1997). More than a replication study in a new population, this research is among the first to empirically ascertain whether SSS is an independent and robust predictor of health, as opposed to a measurement artifact, and, if so, to what extent this association can be attributed to a psychosocial pathway.

Conceptual Background

SES Inequality in China

Before diving into SSS and self-rated health, we briefly review recent research on SES inequality in China to provide a broad contextual background. China has experienced dramatic economic growth since the beginning of its economic reform in 1978. Its GDP per capita increased more than 60-fold from $156.4 in 1978 to $9,770.85 in 2018 (NBS 2019). Such an impressive economic growth was accompanied by an equally dramatic rise of income inequality. Using multiple data sources, Xie and Zhou (2014) calculated that the Gini coefficient of family income in China nearly doubled from around 0.30 in 1980 to 0.55 in 2012, a rate much faster than the average for other countries at similar levels of economic development. Other researchers estimated China's Gini coefficient of to have reached an even higher level of 0.61 by 2012 (Gan et al 2014)

Similar to its economic growth, China has made tremendous progress in achieving universal nine-year compulsory education and expanding higher education. The average years of schooling increased from 6.7 years in 1996 to 8.3 years in 2008 (Yang et al. 2014), and the number of college graduates nearly tripled from nearly 1.9 million in 2003 to 5.8 million in 2010 (Hu and Hibel 2014). Nevertheless, rural-urban, income, and regional gaps in educational attainment remain notable. For example, Yang et al. (2014) estimated that urban Chinese adults received on average 3.2 more years of education than their rural counterparts and those in the highest income quintile received 4.7 more years of education that those in the bottom income quintile. Interestingly, parents' political status no longer predicts children's success in college admission, although parents' educational attainment remains a strong predictor (Hu and Hibel 2014).

As new data collection and dissemination continue to grow in China, social scientists are able to examine previously overlooked domain of SES inequality. Using the 2012 wave of CFPS data, for example, Xie and Jin (2015) found that with a Gini coefficient of 0.73, the level of household wealth inequality far exceeded that of household income inequality. In fact, the richest 1% of Chinese households owned more than one-third of the total national household wealth, while the poorest 25% owned merely 1%. Household wealth inequality was correlated with other SES indicators. For example, the average net worth of urban households was more than twice as high as rural households, and the households headed by college graduates had on average a five-fold higher net worth than those whose heads completed elementary school or less.

The literature has suggested that SES inequality is the rule rather than the exception in contemporary China, although the level of inequality varies by SES indicators. Due to the multidimensional nature of SES and health, recent research in China has also reported mixed findings about the association between SES inequality and health inequality. For example, Bakkeli (2016) found that income inequality did not affect Chinese adults' risk of physical health problems, whereas Luo and Xie (2020) reported that the rise of income inequality led to life 0.56 and 0.39 years of life lost for Chinese men and women, respectively. This study adds to the literature by focusing on SSS, an overlooked domain of SES in the Chinese context, and assessing its predictive power for health relative to other SES indicators.

A Comprehensive Measure of Multidimensional SES

Given its multidimensional nature, an individual's SES can hardly be fully captured by a set of objective indicators measured in a general or health-related survey. The association between SSS and health may be due to the fact that SSS taps into certain aspects of SES that are not measured

by such objective indicators as education, income, and occupation. It is possible that SSS encompasses a wider range of an individual's socioeconomic conditions and is reported by a survey participant as a cognitive average of not only standard markers of SES but also nuanced elements of SES (Singh-Manoux et al. 2005). This cognitive averaging can take several forms.

First, as a self-appraisal, SSS allows individuals to make a more fine-grained assessment of certain nuanced SES differentials that are largely ignored in typical survey data collection. For example, education is often measured by years of schooling completed or the highest degree attained. However, neither measure reflects potential gaps in the quality of education and associated future prospects between an elite private school and a poorly funded public school, which may be taken into account in an individual's self-assessment of educational attainment and social status (Singh-Manoux et al. 2005).

Second, individuals sometimes borrow information from their immediate families to infer their personal social status (Davis and Robinson 1988). For example, in a patriarchal society like China, a married woman may factor in her husband's occupation and income, consciously or subconsciously, when judging her relative rank in the social hierarchy. To the extent that people's health and mortality are influenced by other family members' SES (Jaffe et al. 2005; Skalická and Kunst 2008; Monden et al. 2003), SSS that encompasses both individual- and family-level characteristics could outperform individual-level markers of SES in predicting health.

Third, cognitive averaging may involve a life course aspect in that individuals can incorporate their past socioeconomic experiences and future prospects, in addition to current conditions, into the assessment of their social status (Singh-Manoux et al. 2003; Franzini and Fernandez-Esquer 2006). There is abundant evidence that socioeconomic conditions in

childhood and young adulthood have a lasting impact on health and mortality in later adulthood in diverse populations (Wen and Gu 2011; Hayward and Gorman 2004; Osler et al. 2009; Ross and Wu 1996). Expectations towards the future, also known as future orientation (Steinberg et al. 2009), are positively related to life satisfaction and happiness, which in turn have recently been found to be protective against the detrimental health effects of income inequality in Chinese population (Cheung 2015; Du et al. 2019). These life course aspects of SES cannot be captured by standard snapshot measures of individuals' current circumstances.

Most prior studies of SSS and health in adult populations have included one or more objective measures of SES in three major domains: education (years of schooling; highest degree), income (personal; household), and occupation (employment status; occupational prestige). A few studies have also considered alternative objective economic measures such as self-reported financial strain and security (Wright and Steptoe 2005; Cheng et al. 2002), reliance on social assistance (Franzini and Fernandez-Esquer 2006), home ownership (Wolff et al. 2010), household asset ownership and household expenditures (Nobles et al. 2013), and total net wealth (Demakakos et al. 2008). In the Chinese context, other dimensions of SES (e.g., hukou status and political capital) are also important determinants of social stratification (Bonnefond and Clément 2014; Chen and Williams 2018). A recent study of Chinese adults found that political capital, measured by the membership of Chinese Communist Party (CCP), was a stronger predictor of health than household income (Xu and Xie 2017). Another study found that in the older Chinese adults above 65 years, higher self-ratings of financial status was associated with lower all-cause mortality risk; and this association was stronger than that between objective assessments of financial status and mortality (Wang et al. 2019).

Figure 1 summarizes the conceptual framework of this study. As illustrated in Figure 1, SSS and objective indicators are correlated with each other, represented by a double-headed curved arrow, because they are both observed variables of the latent SES. In this study, we accounted for not only the common objective indicators of SES (e.g., education, income, and occupation), but also such novel measures as household wealth, political status, and early-life SES. We consider future prospect itself, measured by respondent's confidence in his/her future, as a psychosocial factor because it may reflect social and psychological resources other than SES. In addition, previous research on SES and health often adopts a person-centered approach and only measures the income or wealth of the household as a whole, thereby ignoring the health effects of other family members' personal SES. We address this limitation by explicitly measuring and modeling spouse's educational attainment, occupation, and political capital in the married subsample.

[Figure 1 here]

Social Comparison and Psychosocial Pathway

Aside from its potential advantage in measuring multidimensional SES, SSS may also affect health via a psychosocial pathway (see Figure 1). The psychosocial pathway posits that SSS results from social comparison and leads to positive or negative emotions, depending on where one's self-perceived standing is in the social hierarchy (Wilkinson 1999). Self-perception of a low status may engender a variety of negative emotions including anxiety, stress, low self-esteem, a sense of lack of control, depression, pessimism, and fatalism (Lachman and Weaver 1998; Gallo and Matthews 2003; Wilkinson 1999). Many studies have shown that cumulative experience of these negative emotions can trigger chronic physiological responses that increase

risk of cardiovascular disease, metabolic disease, inflammation, declined physical and cognitive functioning, and mortality (Seeman et al. 2001; Seeman et al. 2004; Mattei et al. 2010; Kubzansky et al. 1999; Singer and Ryff 1999; McEwen and Seeman 1999; Song et al. 2019; Pearlin et al. 2005; Fiscella and Franks 1997). In addition, these negative emotions can impair health indirectly by inducing unhealthy behavioral coping strategies such as smoking, drinking alcohol, poor diet, and physical inactivity (Lynch et al. 1997; Algren et al. 2018; Krueger and Chang 2008). In contrast, favorable social comparison and thus higher levels of SSS enhance self-esteem and foster sense of control, purpose, and meaningfulness in life (Jin et al. 2012), all of which are protective against disease risk and unhealthy behaviors.

In China, there is some evidence that SSS is associated with psychological well-being, although the findings are not obtained from population-based samples of adults. For example, one study found that adolescents with higher levels of SSS reported lower levels of social anxiety (Liu et al. 2017). Another study found that in a clinical sample, patients with heart failure who perceived higher SSS reported more depressive symptoms, after adjusting for their education, employment status, and personal income (Zou et al. 2016).

Several population-based studies have attempted to examine the mediating role of psychosocial factor in the association between SSS and health in adults. In a national sample of U.S. consumers, Operario et al. (2004) found a substantial reduction in the association between SSS and self-rated health after adjusting for negative affect, measured by the Kessler psychological distress scale. In a regional sample of middle-aged and older married U.S. couples, Cundiff et al. (2013) found that psychosocial vulnerability, a composite measure of neuroticism, depressive symptoms, optimism, and marital adjustment, significantly mediated the relationship between SSS and self-rated health after controlling for age and income. Using national samples

of middle-aged and older adults in the U.S. and Japan, Kan et al. (2014) found that selected psychological resources (sense of control, self-esteem, optimism, and neuroticism) significantly mediated most of the associations of SSS and education with self-rated health and chronic conditions, despite some cross-country and gender differences.

However, these studies have several limitations. First, they control for only a handful demographic and SES confounders. For example, Cundiff et al. (2013), Kan et al. (2014), and Operario et al. (2004) included only one or objective measures of SES (education and income). Therefore, unmeasured confounding variables may interplay in the association among SSS, objective indicators of SES, psychosocial factors, and health. Second, none of these studies used a sample representative of a general adult population. Third, all of these studies are cross-sectional, thus limited in their capacity to clarify the causal pathways linking SSS, psychosocial factors, and health. In this study, we address these limitations by conducting a longitudinal mediation analysis of a nationally representative sample of the Chinese adults and controlling for a rich set of confounding variables.

Our capacity to select theoretically relevant psychosocial factors is limited by data availability. The source of data for this study comes from a general-purpose longitudinal household survey. The survey collects rich data on SES but only includes a handful of psychosocial factors over time. After a thorough search of four waves of the survey, we have identified and included four psychosocial factors in our mediation analysis: future prospect, life satisfaction, and non-specific psychological distress, and depressive symptoms.

Research Hypotheses

The measurement explanation and the psychosocial pathway are not mutually exclusive. In fact, the life course aspect and future prospects embedded in SSS may reflect another form of social comparison – that is, within-person comparison over time, which can shape the psychosocial parameters of health. Both the measurement and psychosocial explanations suggest that SSS predicts self-rated health above and beyond standard objective measures of SES; that is:

Hypothesis 1: SSS is positively related to self-rated health even after adjusting for education, occupation, and income.

If SSS is a more comprehensive measure of SES because of cognitive averaging, we expect that adjusting for these additional measures would attenuate the association between SSS and self-rated health; that is:

Hypothesis 2: The positive association between SSS and self-rated health becomes weaker or even disappears after further taking into account household wealth, political status, early-life SES, and spouse' SES.

To the extent that people make constant social comparisons and unfavorable comparisons engender social anxiety and stress, we expect that individuals of lower SSS have worse psychological well-being, which in turn leads to worse self-rated health; that is:

Hypothesis 3: Psychological well-being mediates the association between SSS and self-rated health.

Data and Measures

Data Source and Sample

This study draws upon data from the China Family Panel Studies (CFPS), a nationally representative longitudinal survey of Chinese communities, families, and individuals. The studies focus on the economic, as well as the non-economic, well-being of the Chinese population, with a wealth of information covering such topics as economic activities, education outcomes, family dynamics and relationships, and health. The nation-wide CFPS baseline survey in 2010 successfully interviewed 14,798 households from 635 communities, including 33,600 adults and 8,990 children, in 25 designated provinces, for an approximate response rate of 81%, with the majority of the non-response due to non-contact. The stratified multi-stage sampling strategy ensures that the CFPS sample represents 95% of the total population in China in 2010 (Xie 2012). Three full-scale follow-up surveys were conducted in 2012, 2014, and 2016 with follow-up rates of 80.6%, 83.8%, and 82%, respectively. About 69% of the 2010 baseline respondents were re-interviewed in 2016.

To derive the analytical samples, we first identified a total number of 92,419 adult person-year observations in the age range of 20-70 years in any of the 2010-2016 waves. Because our regression models with lagged independent variables requires at least two repeated observations of the same individual over time, we excluded 16,704 observations that were measured only once during the period of 2010-2016 (among them, 2,695 observations were out of the age range due to normal aging). Among the remaining 75,715 observations, we dropped 5,585 who had missing data on SSS or self-rated health. After list-wise deletion of observations with missing data on any other independent variable or sampling weights, we obtained a final sample of 48,805 among whom 35,719 were married.

Measures

The dependent variable is self-rated health, collected by asking respondents to rate their overall health status at the time of interview. Respondents were allowed to choose one of five categories, "poor," "fair," "good," "very good," or "excellent." Self-rated health is a widely used outcome in not only the general social research on health (Idler and Benyamini 1997; Frankenberg and Jones 2004; Garbarski 2016) but also the literature on SSS and health (Singh-Manoux et al. 2003; Singh-Manoux et al. 2005; Adler et al. 2008; Cundiff et al. 2013; Demakakos et al. 2008; Garbarski 2010). Self-rated health has also been used as the main health outcome in recent studies using the CFPS data (Xu and Xie 2016, 2017).

The main independent variable of interest is SSS. In CFPS, SSS was measured by asking respondents to rate their social status in the local area on a 5-point Likert scale from 1 ("very low") to 5 ("very high"). This is different from Western studies where SSS is measured by the MacArthur scale in the form of a 10-rung ladder. However, the 10-point MacArthur scale is often collapsed into five ordinal ranks similar to the scale of the SSS in this study (Adler et al. 2008; Singh-Manoux et al. 2003; Takahashi et al. 2017; Karvonen and Rahkonen 2011). To capture its potential nonlinearity (Karvonen and Rahkonen 2011), we treated SSS as an ordinal variable in the main analysis and a continuous variable in the sensitivity analysis.

We included three standard objective SES indicators. Education was measured by the highest degree attained and divided into three categories: primary school or less, middle school, and high school or above. Occupation was divided into five categories: agricultural worker, skilled worker, service work, professional or administrative, and unemployed or other. Total household income was summarized across self-reports from multiple sources, including salary and wage, business income, property income, and transfer income (e.g., financial support from

relatives and friends and government subsidy). We divided total household income by the square root of household size as the final measure of household income.

We incorporated multiple dimensions of dynamic SES. While income measures the flow of economic resources at any given point in time, wealth reflects a stock of financial assets accumulated over time. We measured total household wealth in terms of net worth, which was the sum of land, housing, financial assets (including savings, stock, funds, bonds, financial derivatives, etc.), fixed assets for production (including agricultural machinery and business assets), and durable goods (valuables included), minus housing and non-housing liabilities. Political capital was measured by a dichotomous variable indicating whether the respondent was a member of CCP. Early-life SES was captured by parents' literacy (being literate or not) when respondents were 14 years old. We chose mother's literacy as the main indicator because of model convergence problems when using father's literacy. In the married subsample, we measured spouse's education, occupation, and CCP membership in the same ways as the main respondent.

We considered three psychological mediators. Future prospect was measured by asking respondents to rate how confident they were in their future on a 5-point Likert scale from 1 ("not at all") to 5 ("very confident"). Life satisfaction was also measured on a 5-point Likert scale; respondents were asked to rate how satisfied they were with their life on from 1 ("very unsatisfied") to 5 ("very satisfied"). Psychological problem was measured by standardized scores of two scales. The 6-item Kessler Psychological Distress Scale (K-6), a screening tool for non-specific psychological distress (Kessler et al. 2002), was included in the 2010 and 2014 waves of CFPS. Respondents were asked how frequently they experienced six symptoms of nonspecific psychological distress during the past month. These symptoms included feeling nervous,

hopeless, restless or fidgety, so sad that nothing could cheer them up, that everything was an effort, and feeling worthless. The 8-item short version of Center for Epidemiological Studies Depression Scale (CESD-8) was used in the 2012 and 2016 waves of CFPS (Wu et al. 2018). The eight symptoms measured included "feeling depressed", "everything is an effort", "restless sleep", "feeling happy" (reverse coded), "feeling lonely", "enjoying life" (reverse coded), "feeling sad", and "cannot get going". For each item, respondents were asked how often they experienced the symptoms in the past week. We calculated z-scores of the K-6 and CESD-8 scales in each wave, with a higher score indicating a higher level of psychological distress or depression, and referred to the measure as psychological problem.

We controlled for theoretically relevant socio-demographic variables, including age and its squared term, gender, marital status (married or not), *Hukou* (household registration) status (rural versus urban), migration status (migrant or not), provincial fixed effects, and time fixed effects.

Methods

To test *Hypotheses 1* and *2*, we estimated regression models with lagged independent variables to mitigate the potential issue of reverse causality in the relationship between SES (including SSS) and health status. Treating self-rated health as an ordinal variable, we fitted ordered logit models to the latent health of person *i* in province *j* at wave *t*, denoted by $y^*_{i,j,t}$:

$$y^*_{i,j,t} = \beta_0 + \beta_1 SSS_{i,j,t-1} + \beta_2 SES_{i,j,t-1} + \sum_m \beta_m X_{i,j,t-1} + \gamma p_j + \delta T_t + \varepsilon_{i,j,t}, \qquad (1)$$

where SSS, objective SES indicators (denoted by $SES_{i,j,t}$), and time-varying socio-demographic control variables (denoted by $X_{i,j,t}$) were all measured at wave *t-1*; p_j and T_t represent provincial and time fixed-effects, respectively; and $\varepsilon_{i,j,t}$ is the random error. We calculated robust standard

errors to adjust for correlations among repeated observations of the same individuals over time. We applied longitudinal weights provided in the CFPS data to reduce the potential bias induced by panel attrition under the missing-at-random assumption.

We conducted several robustness checks. First, we re-estimated Equation (1) using ordinary least squares (OLS) to assess whether the results would be sensitive to the functional form of the regression model. Second, we added self-rated health at wave *t-1* as a control variable in regression models of self-rated health at wave *t* to better establish the temporal order between SSS and health (Garbarski 2010; Nobles et al. 2013). Third, we considered coding SSS as a continuous instead of categorical variable. Fourth, we assessed the impact of missing data on the dependent and independent variables by employing multiple-imputation technique. Lastly, we estimated fixed-effects linear models to adjust for unobserved time-invariant characteristics at the individual level (e.g., personality and genetics).

We employed the Karlson-Holm-Breen (KHB) method (Karlson et al. 2012) to test *Hypothesis 3*. The KHB method is a regression-based path analysis. In the language of causal inference, it decomposes the total effect of a treatment into direct effect and indirect effect. In this study, the decomposition analysis allows us to assess how much of the association between SSS and self-rated health can be explained by the potential psychosocial mediators (known as the mediation effect). Originally designed to compare the estimated coefficients between nested logit (or probit) models, the KHB method can be generalized to other nonlinear probability models such as ordered logit models in this study and is computationally simpler than other methods (Breen et al. 2013). Similar to the traditional path analysis for linear models, the KHB method proceeded in several steps. First, psychosocial mediators, denoted by $Z_{i,j,t-1}$ for person *i* in province *j* at wave *t*, were regressed on $SSS_{i,j,t-1}$ to obtain an estimate of the so-called *path a* –

the effect of SSS on the mediators. The residuals from this model, denoted by $R_{i,j,t-1}$, were then used in the reduced model of the latent health variable:

$$y^*_{i,j,t} = \alpha_R + \beta_R SSS_{i,j,t-1} + \gamma_R R_{i,j,t-1} + \delta_R C + \varepsilon_{i,j,t}, \quad (2)$$

where C denotes all the control variables; and the subscript *R* indicates α_R, β_R, γ_R, and δ_R are coefficients from the reduced model. In the language of path analysis, the coefficient β_R reflects *path c* – the total effect of SSS on self-rated health. Lastly, a full model of the latent health could be specified as:

$$y^*_{i,j,t} = \alpha_F + \beta_F SSS_{i,j,t-1} + \gamma_F Z_{i,j,t-1} + \delta_F C + \varepsilon_{i,j,t}, \quad (3)$$

where the subscript *F* indicates α_F, β_F, γ_F, and δ_F are coefficients from the full model. The coefficient β_F reflects *path c'* – the direct effect of SSS on self-rated health. The coefficient γ_F reflects *path b* – the effect of psychosocial mediators on self-rated health. The difference between β_R and β_F reflects the indirect effect – the part of the association between SSS and self-rated health that could be explained by psychosocial mediators.

Results

Descriptive statistics

Table 1 reports the descriptive statistics of all the variables analyzed in this study. Overall, most of the variables have similar distributions in the full sample and the married subsample. With respect to the outcome variable, about 36% of the sample reported good health and another 36% reported poor (17.2%) or fair (18.3%) health. Only about 11% of the respondents reported excellent health. The distribution of the main independent variable of interest – subjective social status was slightly skewed, but less so when compared to the previous research (Chen and Williams 2018). About half of the sample considered themselves in the middle of the social

status ladder, and more respondents rated their status as low (18.3%) or very low (12.9%) than high (13.3%) or very high (4.9%).

[Table 1 here]

Turing to the conventional objective indicators of SES, the respondents were not well educated – half of the sample did not attend beyond primary school, most likely to be skilled workers (35.9%), and earned an adjusted household income of 22,178 RMB (slightly over $3,000). As for the other unconventional SES indicators, the average household wealth was about 378,182 RMB, with a more than doubled standard deviation of 829,060 RMB. Less than 10% of the respondents were members of the Communist Party, a restricted and perhaps still elite political status in contemporary China (Xu and Xie 2017). As an indicator of life course SES, less than a third of the respondents had a literate mother, reflecting the limited educational opportunities available to the older Chinese population. The distributions of the spouse's education, occupation, and the Communist Party membership resembled those of the main respondents.

Turning to the three potential mediators of psychological well-being, the z-score of psychological problem had a mean of zero and a standard deviation of one by construction. On average, the respondents were somewhere between "neither unsatisfied nor satisfied" and "satisfied" with their life and between "neither unconfident nor confident" and "confident" in their future.

Regression results

Table 2 reports the coefficient estimates from ordered logit models of self-rated health, with longitudinal weights applied to adjust for sample attrition over time. We fitted two models to the

full sample. Model 1 tested *Hypothesis 1* by including the three conventional objective indicators of SES while controlling for demographic characteristics, provincial fixed effects, and time fixed effects. Compared with the reference group who rated their SSS as very low, those who had higher ratings of SSS also reported significantly better health, thereby confirming *Hypothesis 1*. In fact, the positive gradient in self-rated health by SSS was almost linear on the log odds scale (β = 0.177, 0.336, 0.511, and 0.669 for low, average, high, and very high SSS, respectively). Educational attainment, occupation, and household income were also positively related to self-rated health, although some of these associations were nonlinear. For example, compared with those who only completed primary school or less, middle school graduates were about 20% (= exp(0.180)-1) more likely to report better health, whereas high school graduates or above were not significantly different from the reference group.

[Table 2 here]

Adding controls for CCP membership, household wealth, and mother's literacy in Model 2 did not qualitatively alter the positive gradient in self-rated health by SSS, although the point estimates of the log odds were slightly attenuated. CCP membership was positively associated with self-rated health, but mother's literacy was not. Not surprisingly, respondents from wealthier households reported significantly better health.

Model 3 was fitted to the married subsample, allowing additional controls for spouse's SES. Again, the positive gradient in self-rated health by SSS remained statistically significant, despite slight changes in the point estimates. Having a spouse who was a CCP member was associated with better self-rated health. Surprisingly, respondents whose spouses had more prestigious occupations (e.g., skilled worker and professional/administrative) reported worse health. Spouses' educational attainment was not predictive of respondents' self-rated health.

To check the robustness of using alternative model specification (as opposed to ordered logit), we re-estimated Models 2 and 3 using OLS and reported the results in Appendix Table A1. Despite changes in the point estimates, the same nearly linear positive gradient in self-rated health by SSS was evident in the full sample and the married subsample. To assess the impact of baseline health, we re-estimated Models 2 and 3 of self-rated health at wave *t* after adjusting for self-rated health at wave *t-1* and reported the results in Appendix Table A2. Compared with those whose SSS was very low, the respondents whose SSS was low no longer reported significantly better health in the full sample or the married subsample. Nevertheless, a significantly positive association persisted for those with average or higher SSS. When we treated SSS as a continuous variable, it still predicted self-rated health above and beyond all the other SES indicators in both the full sample and the married subsample (see Appendix Table A3). Next, we repeated the analyses of Models 2 and 3 in Table 2 after using multiple-imputation by chained equations with three random replications to assess the robustness against missing data. The sample size increased from 48,809 to 64,812 for the full sample and from 35,719 to 56,335 for the married subsample after multiple-imputation (see Appendix Table A4). Again, despite slight changes in the point estimates, the positive association between SSS and self-rated health remained statistically significant after adjusting for other SES indicators in both the full sample and the married subsample. Lastly, after adjusting for individual-level fixed effects, the positive association between SSS and self-rated health remained significant and approximately linear in terms of coefficient sizes (see Appendix Table A5).

Together, these findings are robust against different model specifications and do not support *Hypothesis 2*. The predictive power of SSS for health in Chinese adults is not fully weakened after taking into account a host of SES indicators. SSS may encompass such measures

as political status, wealth, spouse's SES, and early-life SES. However, these additional factors only explain a limited amount of variation in the association between SSS and health, because the decline in the coefficient estimates of SSS is generally modest.

Mediation results

To simplify the path diagram of the mediation analysis, we treated SSS and the three psychological mediators as continuous variables. Figure 2 depicts the estimated path diagram using the KHB method in the full sample, after adjusting for all the other independent variables included in Model 2 of Table 2. Consistent with our expectation, higher levels of SSS were significantly associated with better future prospect (*path* a_1 = 0.278) and life satisfaction (*path* a_2 = 0.332), as well as lower levels of psychological problem (*path* a_3 = -0.106). In turn, these mediators were related to self-rated health in expected directions. Higher levels of future prospect (*path* b_1 = 0.134) and life satisfaction (*path* b_2 = 0.069) were associated with better self-rated health, whereas higher levels of psychological problem were associated with worse self-rated health (*path* b_3 = -0.329). These mediators together accounted for about 60% of the total association between SSS and self-rated health – 23.0% by future prospect, 14.3% by life satisfaction, and 21.6% by psychological problem. After adjusting for these mediators, the log odds of the association between SSS and self-rated health dropped from 0.088 to 0.035, but remained statistically significant.

[Figure 2 here]

Figure 3 depicts the estimated path diagram using the KHB method in the married subsample, after adjusting for all the other independent variables included in Model 3 of Table 2. The findings are qualitatively the same as those in the full sample. The three psychosocial

mediators together explained nearly 60% of the association between SSS and self-rated health – 25.0% by future prospect, 13.0% by life satisfaction, and 21.4% by psychological problem. After adjusting for these mediators, the log odds of the association between SSS and self-rated health dropped from 0.088 to 0.036.

[Figure 3 here]

Discussion

Using a nationally representative sample, we are among the first to systematically investigate the relationship between SSS and self-rated health in Chinese adults between ages 20 and 70. A particular strength of the study is the ability to incorporate a rich set of SES indicators, including not only the standard measures of education, occupation, and income, but also such measures as household wealth, political capital, life-course SES, and spouse's SES. Our study is novel because it is among the few to simultaneously consider such comprehensive measures of SES, even though each of the indicators may not be novel in itself. We note that all the measures of SES are based on respondents' self-reports and thus they are subject to reporting error. Nevertheless, recent research using the CFPS data has shown that some of these measures are valid predictors of health (Xu and Xie 2016, 2017).

Consistent with previous research in a number of diverse Western (Adler et al. 2008; Singh-Manoux et al. 2003; Singh-Manoux et al. 2005; Garbarski 2010; Kopp et al. 2004; Macleod et al. 2005) and Eastern (Collins and Goldman 2008; Hu et al. 2005; Rarick et al. 2018; Nobles et al. 2013; Sakurai et al. 2010) subpopulations, we found a positive association between SSS and self-rated health after adjusting for education, income, and occupation – the three most common indicators of objective SES, as well as a host of demographic, regional, and temporal

control variables. This finding supports our *Hypothesis 1* and provides new insights thanks to our research design. First, unlike most of the previous research that relies on cross-sectional data (for exceptions, see Garbarski 2010; Nobles et al. 2013; Singh-Manoux et al. 2005), we fitted regression models to longitudinal data collected biennially from 2010 to 2016. Therefore, our finding is less susceptible to the potential problem of reverse causality. It indicates a prospective association between current SSS and self-rated health two years later and this longitudinal association persists over a 6-year follow-up period. Second, we experimented with both categorical and continuous measures of SSS and the regression results converged at an approximately linear association between SSS and self-rated health. In other words, the potential health benefit of improving one's SSS does not depend upon any threshold on the SSS spectrum. Third, we have conducted extensive sensitivity analyses, showing that the positive longitudinal association between SSS and self-rated health in Chinese adults is robust against different model specifications, choice of control variables, and missing data.

We then tested whether the predictive power of SSS could be attributed to its measurement advantage as a cognitive average of multidimensional SES by controlling for additional measures of SES in regression models. Many of these additional controls, including household wealth, political capital, early-life SES and spouse's SES have been implicated but rarely tested in previous research (for exceptions, see Demakakos et al. 2008; Singh-Manoux et al. 2003). Adding these additional SES controls in the regression models only altered the coefficient estimates for SSS slightly, lending to weak support of *Hypothesis 2* at best. In additional analysis, we explored gender variation in the association between SES and self-rated health. However, we found few gendered patterns. In Appendix Table 6, for example, none of the interactions between gender and SSS categories was statistically significant.

It is worth noting that some, but not all, objective SES indicators were also independently predictive of self-rated health. For example, consistent with recent research using the CFPS data (Xu and Xie 2016, 2017), the association between education and self-rated health was non-linear, and both household wealth and income mattered. Interestingly, spouse's CCP membership was positively associated with respondents' self-rated health, but respondents' own CCP membership was not. This may suggest that the health benefit of political capital is often harvested in covert and in the form of spill-over effect to family members given China's rigid political atmosphere (Xu and Xie 2017). On the other hand, the significant negative association between spouse's occupation and respondents' self-rated health demands further study.

What is the magnitude of the association between SSS and self-rated health relative to the objective SES indicators? We calculated margins, or average predicted probabilities by SSS and a few selected objective SES indicators. As shown in Appendix Figure A1, the SSS gradient in self-rated health is as steep as the household wealth gradient, if not steeper. This is most evident at the lower and upper ends of the health spectrum. For example, the predicted probability of reporting poor self-rated health drops sharply by nearly 40% from 0.206 for very low SSS to 0.124 for very high SSS, but it decreases only by about 22% from 0.191 for the poorest household wealth quintile to 0.156 for the richest quintile. Similarly, the predicted probability of reporting excellent self-rated health increases dramatically by about 71% from 0.086 for very low SSS to 0.147 for very high SSS, but it rises only by about 25% from 0.093 for the poorest household wealth quintile to 0.116 for the richest quintile.

Lastly, we tested whether the association between SSS and self-rated health is mediated via a psychosocial pathway (*Hypothesis* 3). Unlike some prior studies (Operario et al. 2004; Cundiff et al. 2013), we did not simply enter psychosocial factors into regression models as

control variables and then directly compare coefficients across nested models. Instead, following Kan et al.'s (2014) approach, we adopted a multiple mediation analysis procedure to fully assess all the paths linking SSS to self-rated health via three psychosocial factors. The mediation analysis showed significant associations of SSS with future prospect, life satisfaction, and psychological problem in expected directions. In support of *Hypothesis 3* and consistent with previous research using non-representative adult samples in the U.S. and Japan (Operario et al. 2004; Cundiff et al. 2013; Kan et al. 2014), we found a substantial reduction (about 60%) in the longitudinal association between current SSS and self-rated health two years later after adjusting for psychosocial factors. Specifically, future prospect and psychological problem each explained about 20-25% of the association and life satisfaction accounted for about 13-14%, depending on the sample (the full sample versus the married subsample). Given that we have considered a comprehensive list of objective SES indicators but only three imperfect psychosocial factors, these findings together seem to suggest that SSS correlates with self-rated health predominantly via a psychosocial pathway.

These findings need to be interpreted in light of the study limitations. First, we only considered one particular health outcome – self-rated health. As a general-purpose household survey, CFPS collects health-related information such as disease history and general health status from respondents' self-reports or household members' proxy reports. The only objective health measure is mortality which is inappropriate for study of middle-aged or younger adults. Nevertheless, self-rated health remains the most widely used outcome in the literature on SSS and health to date (Rarick et al. 2018; Präg et al. 2016; Takahashi et al. 2017). Future research is needed to assess whether our findings can be generalized to other health outcomes in Chinese adults. Second, our measure of SSS is based on respondents' ratings on a 5-point Likert scale

rather than the MacArthur scale commonly used in the literature, making it difficult to compare results across studies. Third, despite the longitudinal nature of CFPS, we are unable to establish a causal relationship between SSS and self-rated health based on observational data. Our mediation analysis does not provide a causal interpretation either. Lastly, most indicators of objective SES in this study capture the stock of one's socioeconomic resources (except household income). It is possible that SSS involves self-assessment of dynamic flows of socioeconomic resources as well. For example, the measure of occupation does not reflect any difference in job security or benefit between employees in the public sector and those in the private sector. A service worker in the public sector is de facto tenured and may have considerably better housing subsidy, health care, and pension than a professional employee in the private sector whose job security is uncertain. The former may perceive a higher SSS and enjoy better self-rated health than the latter. Future research is needed to examine the dynamic aspect of SSS and its impact on health.

Despite these limitations, this study confirms SSS as an important predictor of health status in Chinese adults and suggests psychosocial factors as a primary mechanism. These findings have important public health implications. After four decades of rapid economic growth, China has seen an unprecedented increase in socioeconomic inequality which now ranks among the highest in the world (Xie and Zhou 2014). Social comparison, perception of relative position in the social hierarchy, and the resulting negative psychosocial effects may be particularly salient, if not more than objective SES, to the health of the Chinese population. However, the Chinese government seems to be primarily concerned about the threat of rising socioeconomic inequality to the stability of its political regime. This study echoes other scholarly efforts to call public attention to the health inequality by SES in China.

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Table 1. Descriptive statistics of dependent and independent variables in the analyses.

	Full Sample (N = 48,805)		Married Subsample (N =35,719)	
Variable	Mean or %	SD	Mean or %	SD
Self-rated health				
Poor	17.19%		17.41%	
Fair	18.30%		19.00%	
Good	35.91%		36.20%	
Very good	17.59%		16.93%	
Excellent	11.01%		10.47%	
Subjective social status				
Very low = 1	12.90%		11.95%	
Low = 2	18.33%		17.67%	
Average = 3	50.61%		51.28%	
High = 4	13.31%		14.07%	
Very high = 5	4.86%		5.03%	
Age (years)	45.62	13.03	47.12	11.91
Male (yes = 1, no = 0)	0.49	0.50	0.50	0.50
Married (yes = 1, no = 0)	0.88	0.33		
Urban hukou (yes = 1, no = 0)	0.29	0.45	0.29	0.45
Migrant (yes = 1, no = 0)	0.11	0.32	0.11	0.31
Educational attainment				
<= Primary school	48.21%		49.83%	
Middle school	29.71%		30.59%	
>= High school	22.08%		19.58%	
Spouse's educational attainment				
<= Primary school	—		50.67%	
Middle school	—		30.04%	
>= High school	—		19.29%	
Occupation				
Unemployed/Other	28.98%		27.37%	
Agricultural worker	14.60%		14.89%	
Skilled worker	35.90%		38.41%	
Service worker	13.59%		12.81%	
Professional/Admin	6.94%		6.52%	
Spouse's occupation				
Unemployed/Other	—		29.42%	
Agricultural worker	—		14.50%	
Skilled worker	—		37.34%	
Service worker	—		12.61%	
Professional/Admin	—		6.13%	
Mother was literate (yes = 1, no = 0)	0.30	0.46	0.27	0.45
Adjusted household income (RMB)	22,178	31,324	22,299	32,796
Household wealth (RMB)	378,182	829,060	38,6053	83,4008
CCP membership (yes = 1, no = 0)	0.08	0.27	0.08	0.27
Spouse's CCP membership (yes = 1, no =0)	—	—	0.08	0.28

Psychological problem (z-score)	0.00	1.00	-0.04	0.97
Life satisfaction (very unsatisfied = 1, very satisfied = 5)	3.51	1.05	3.56	1.04
Confidence in the future (very unconfident = 1, very confident = 5)	3.80	1.08	3.83	1.07
Wave				
2010	34.05%		35.03%	
2012	34.08%		32.73%	
2014	31.87%		32.24%	

Note: CCP = Chinese Communist Party.

Table 2. Weighted ordered logit models of self-rated health.

	Self-rated Health at Wave *t*		
	Full Sample		Married Subsample
Independent Variables at Wave *t-1*	Model 1	Model 2	Model 3
Subjective social status (ref: very low)			
Low	0.177***	0.162***	0.189***
Average	0.336***	0.311***	0.320***
High	0.511***	0.478***	0.445***
Very high	0.669***	0.644***	0.636***
Education (ref: <= primary school)			
Middle school	0.180***	0.164***	0.139**
>= High school	0.093	0.067	0.053
Occupation (ref: unemployed/other)			
Agricultural worker	0.195***	0.202***	0.229***
Skilled worker	0.116*	0.119*	0.154**
Service worker	0.231***	0.225***	0.234***
Professional/administrative	0.130*	0.117*	0.172***
Adjusted household income (logged)	0.068***	0.046**	0.040*
CCP membership (ref: no)		0.096*	0.106*
Household wealth (ref: bottom quartile)			
2nd quartile		0.203***	0.141*
3rd quartile		0.250***	0.218**
4th quartile		0.255***	0.249***
Mother's literacy (ref: illiterate)		-0.025	-0.042
Spouse's education (ref: <= primary school)			
Middle school			0.066
>= High school			0.038
Spouse's occupation (ref: unemployed/other)			
Agricultural worker			-0.151**
Skilled worker			-0.109*
Service worker			-0.094*
Professional/administrative			-0.135*
Spouse's CCP membership (ref: no)			0.204***
Demographic controls	yes	yes	yes
Provincial fixed effects	yes	yes	yes
Time fixed effects	yes	yes	yes
N of observations	48,805	48,805	35,719

Note: CCP = Chinese Communist Party. *** $p<0.001$, ** $p<0.01$, * $p<0.05$ based on robust standard errors clustered at the individual-level.

Figure 1. Conceptual framework linking subjective social status to self-rated health.

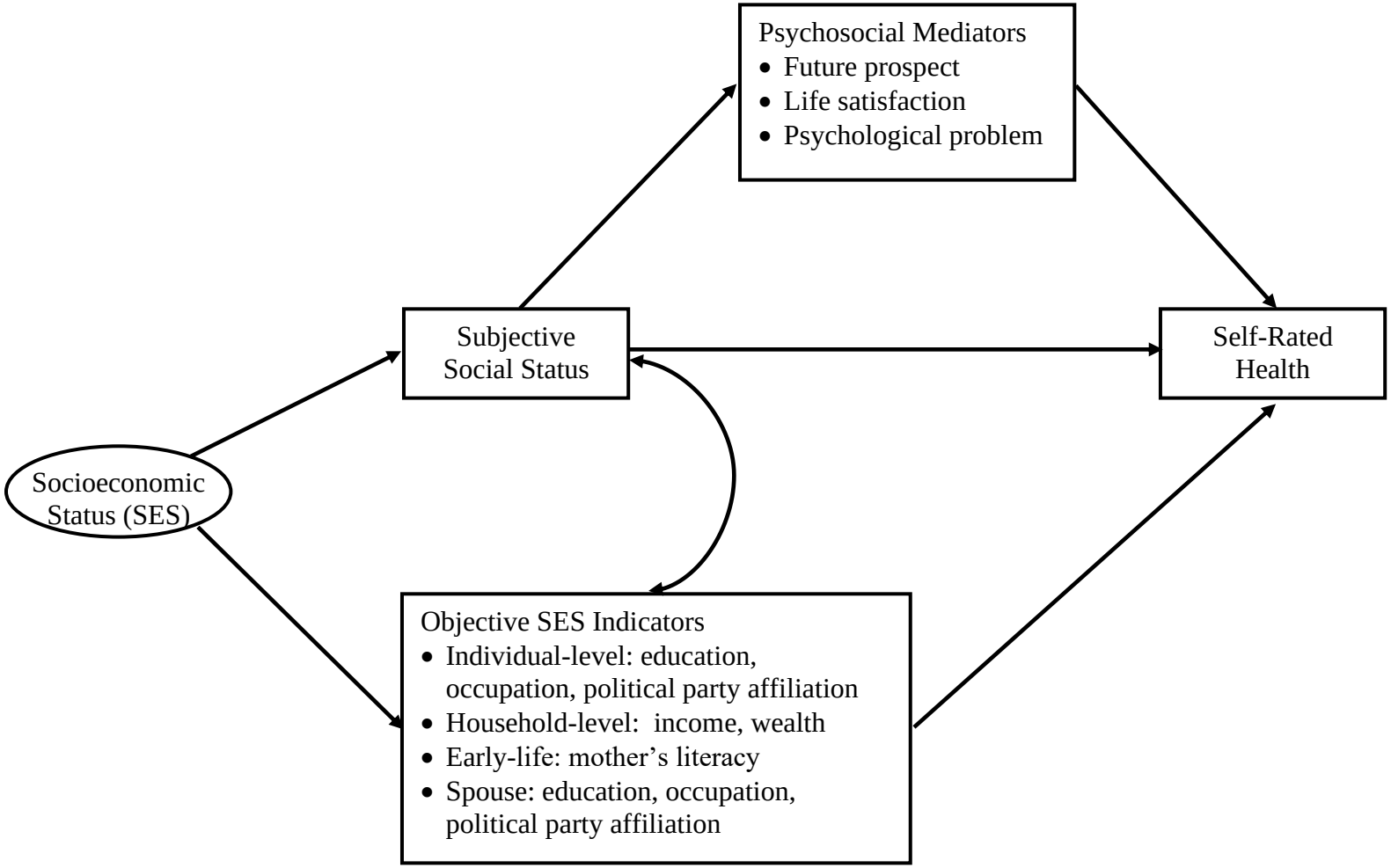
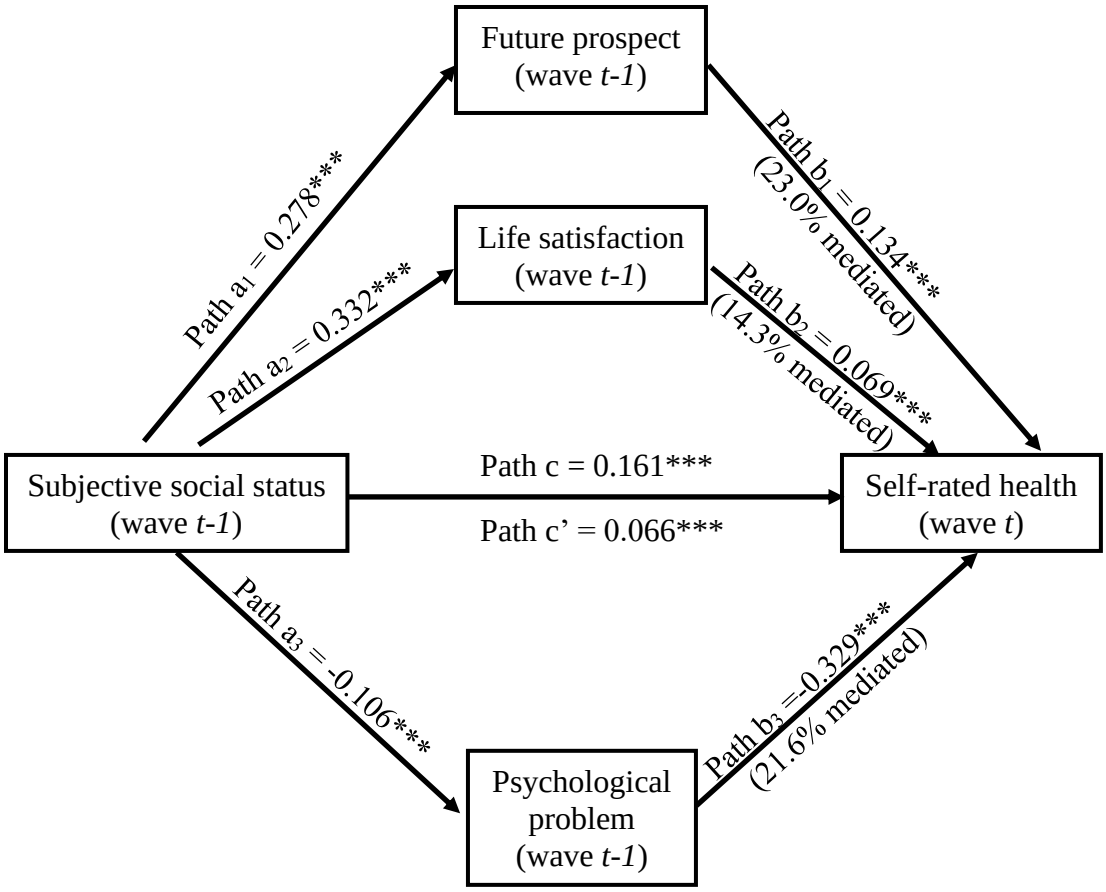
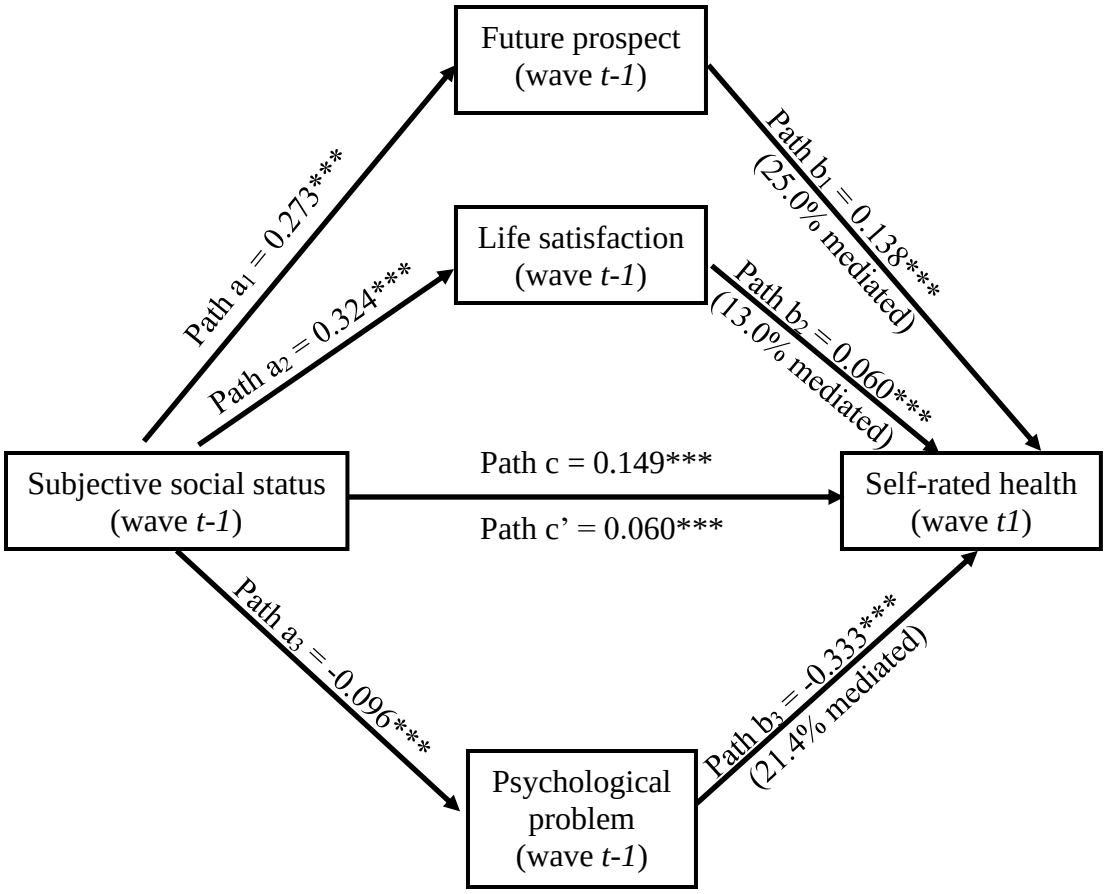


Figure 2. Weighted mediation analysis using the KHB method in the full sample (N = 48,805).



Note: *** $p<0.001$, ** $p<0.01$, * $p<0.05$ based on robust standard errors clustered at the individual-level.

Figure 3. Weighted mediation analysis using the KHB method in the married subsample (N = 35,719).



Note: *** $p<0.001$, ** $p<0.01$, * $p<0.05$ based on robust standard errors clustered at the individual-level.

Appendix Table A1. Weighted OLS models of self-rated health.

	Self-rated Health at Wave *t*	
Independent Variables at Wave *t-1*	Full Sample	Married Subsample
Subjective social status (ref: very low)		
Low	0.100***	0.113***
Average	0.192***	0.194***
High	0.294***	0.271***
Very high	0.396***	0.394***
Education (ref: <= primary school)		
Middle school	0.100***	0.084**
>= High school	0.043	0.030
Occupation (ref: unemployed/other)		
Agricultural worker	0.138***	0.154***
Skilled worker	0.075*	0.095**
Service worker	0.148***	0.148***
Professional/administrative	0.085*	0.116**
Adjusted household income (logged)	0.025*	0.022*
CCP membership (ref: no)	0.059*	0.064*
Household wealth (ref: bottom quartile)		
2nd quartile	0.122**	0.089
3rd quartile	0.162***	0.144**
4th quartile	0.161***	0.158***
Mother's literacy (ref: illiterate)	-0.008	-0.018
Spouse's education (ref: <= primary school)		
Middle school		0.043
>= High school		0.029
Spouse's occupation (ref: unemployed/other)		
Agricultural worker		-0.091*
Skilled worker		-0.068*
Service worker		-0.055*
Professional/administrative		-0.079*
Spouse's CCP membership (ref: no)		0.131***
Demographic controls	yes	yes
Provincial fixed effects	yes	yes
Time fixed effects	yes	yes
N of observations	48,805	35,719

Note: CCP = Chinese Communist Party. *** $p<0.001$, ** $p<0.01$, * $p<0.05$ based on robust standard errors clustered at the individual-level.

Appendix Table A2. Weighted ordered logit models of self-rated health, adjusting for self-rated health in previous wave.

	Self-rated Health at Wave *t*	
Independent Variables at Wave *t-1*	Full Sample	Married Subsample
Subjective social status (ref: very low)		
Low	0.049	0.067
Average	0.116**	0.124**
High	0.191***	0.165**
Very high	0.347***	0.321***
Education (ref: <= primary school)		
Middle school	0.086**	0.067*
>= High school	-0.010	-0.023
Occupation (ref: unemployed/other)		
Agricultural worker	0.110**	0.133**
Skilled worker	0.074*	0.069
Service worker	0.169***	0.162***
Professional/administrative	0.107*	0.159**
Adjusted household income (logged)	0.037***	0.035**
CCP membership (ref: no)	0.052	0.068
Household wealth (ref: bottom quartile)		
2nd quartile	0.108**	0.063
3rd quartile	0.130***	0.101**
4th quartile	0.111**	0.115**
Mother's literacy (ref: illiterate)	-0.022	-0.034
Spouse's education (ref: <= primary school)		
Middle school		0.061*
>= High school		0.040
Spouse's occupation (ref: unemployed/other)		
Agricultural worker		-0.093*
Skilled worker		-0.024
Service worker		-0.054
Professional/administrative		-0.079
Spouse's CCP membership (ref: no)		0.163***
Self-rated health in previous wave	yes	yes
Demographic controls	yes	yes
Provincial fixed effects	yes	yes
Time fixed effects	yes	yes
N of observations	48,805	35,719

Note: CCP = Chinese Communist Party. *** $p<0.001$, ** $p<0.01$, * $p<0.05$ based on robust standard errors clustered at the individual-level.

Appendix Table A3. Weighted ordered logit models of self-rated health, treating subjective social status as a continuous variable.

	Self-rated Health at Wave *t*	
Independent Variables at Wave *t-1*	Full Sample	Married Subsample
Subjective social status	0.159***	0.149***
Education (ref: <= primary school)		
Middle school	0.164***	0.139**
>= High school	0.067	0.053
Occupation (ref: unemployed/other)		
Agricultural worker	0.202***	0.230***
Skilled worker	0.119*	0.155**
Service worker	0.225***	0.235***
Professional/administrative	0.117*	0.171***
Adjusted household income (logged)	0.046**	0.040*
CCP membership (ref: no)	0.097*	0.104*
Household wealth (ref: bottom quartile)		
2nd quartile	0.203***	0.141*
3rd quartile	0.249***	0.218**
4th quartile	0.255***	0.249***
Mother's literacy (ref: illiterate)	-0.025	-0.042
Spouse's education (ref: <= primary school)		
Middle school		0.065
>= High school		0.038
Spouse's occupation (ref: unemployed/other)		
Agricultural worker		-0.151**
Skilled worker		-0.109*
Service worker		-0.094*
Professional/administrative		-0.134*
Spouse's CCP membership (ref: no)		0.203***
Self-rated health in previous wave	yes	yes
Demographic controls	yes	yes
Provincial fixed effects	yes	yes
Time fixed effects	yes	yes
N of observations	48,805	35,719

Note: CCP = Chinese Communist Party. *** $p<0.001$, ** $p<0.01$, * $p<0.05$ based on robust standard errors clustered at the individual-level.

Appendix Table A4. Weighted ordered logit models of self-rated health after multiple-imputation by chained equations for missing data.

	Self-rated Health at Wave *t*	
Independent Variables at Wave *t-1*	Full Sample	Married Subsample
Subjective social status (ref: very low)		
Low	0.162***	0.171***
Average	0.304***	0.302***
High	0.468***	0.452***
Very high	0.654***	0.649***
Education (ref: <= primary school)		
Middle school	0.184***	0.161***
>= High school	0.095*	0.078
Occupation (ref: unemployed/other)		
Agricultural worker	0.186***	0.199***
Skilled worker	0.129**	0.148***
Service worker	0.209***	0.203***
Professional/administrative	0.131*	0.153*
Adjusted household income (logged)	0.037*	0.035*
CCP membership (ref: no)	0.110**	0.123**
Household wealth (ref: bottom quartile)		
2nd quartile	0.174***	0.168***
3rd quartile	0.229***	0.222***
4th quartile	0.276***	0.276***
Mother's literacy (ref: illiterate)	-0.030	-0.011
Spouse's education (ref: <= primary school)		
Middle school		0.062*
>= High school		0.025
Spouse's occupation (ref: unemployed/other)		
Agricultural worker		-0.079*
Skilled worker		-0.082*
Service worker		-0.077**
Professional/administrative		-0.070
Spouse's CCP membership (ref: no)		0.126**
Demographic controls	yes	yes
Provincial fixed effects	yes	yes
Time fixed effects	yes	yes
N of observations	64,812	56,335

Note: CCP = Chinese Communist Party. *** $p<0.001$, ** $p<0.01$, * $p<0.05$ based on robust standard errors clustered at the individual-level.

Appendix Table A5. Individual-level fixed-effects models of self-rated health (unweighted).

	Self-rated Health at Wave *t*	
Independent Variables at Wave *t*	Full Sample	Married Subsample
Subjective social status (ref: very low)		
Low	0.096***	0.101***
Average	0.158***	0.159***
High	0.208***	0.209***
Very high	0.258***	0.265***
Education (ref: <= primary school)		
Middle school	0.019	-0.005
>= High school	0.034	0.069
Occupation (ref: unemployed/other)		
Agricultural worker	0.052*	0.057*
Skilled worker	0.019	0.020
Service worker	0.028	0.032
Professional/administrative	0.002	-0.005
Adjusted household income (logged)	0.002	0.004
CCP membership (ref: no)	-0.038	-0.045
Household wealth (ref: bottom quartile)		
2nd quartile	0.043**	0.038*
3rd quartile	0.067***	0.056**
4th quartile	0.070***	0.068**
Mother's literacy (ref: illiterate)	0.059	0.087
Spouse's education (ref: <= primary school)		
Middle school		0.030
>= High school		-0.025
Spouse's occupation (ref: unemployed/other)		
Agricultural worker		-0.037
Skilled worker		-0.022
Service worker		-0.038
Professional/administrative		-0.005
Spouse's CCP membership (ref: no)		-0.068
Demographic controls	yes	yes
Individual fixed effects	yes	yes
Provincial fixed effects	yes	yes
Time fixed effects	yes	yes
N of observations	77,115	54,415

Note: CCP = Chinese Communist Party. *** $p<0.001$, ** $p<0.01$, * $p<0.05$ based on robust standard errors clustered at the individual-level.

Appendix Table A6. Weighted ordered logit models of self-rated health with interactions between gender and subjective social status.

	Self-rated Health at Wave *t*	
Independent Variables at Wave *t-1*	Full Sample	Married Subsample
Subjective social status (ref: very low)		
Low	0.166**	0.187**
Average	0.304***	0.305***
High	0.419***	0.376***
Very high	0.604***	0.611***
Gender x Subjective social status		
Male x Low	-0.007	0.007
Male x Average	0.018	0.033
Male x High	0.116	0.135
Male x Very high	0.093	0.055
Education (ref: <= primary school)		
Middle school	0.164***	0.139**
>= High school	0.067	0.053
Occupation (ref: unemployed/other)		
Agricultural worker	0.204***	0.231***
Skilled worker	0.120*	0.157***
Service worker	0.225***	0.235***
Professional/administrative	0.117*	0.172***
Adjusted household income (logged)	0.046**	0.040*
CCP membership (ref: no)	0.091*	0.101*
Household wealth (ref: bottom quartile)		
2nd quartile	0.203***	0.141*
3rd quartile	0.250***	0.219**
4th quartile	0.255***	0.249***
Mother's literacy (ref: illiterate)	-0.025	-0.042
Spouse's education (ref: <= primary school)		
Middle school		0.066
>= High school		0.038
Spouse's occupation (ref: unemployed/other)		
Agricultural worker		-0.153**
Skilled worker		-0.111*
Service worker		-0.095*
Professional/administrative		-0.135**
Spouse's CCP membership (ref: no)		0.206***
Demographic controls	yes	yes
Individual fixed effects	yes	yes
Provincial fixed effects	yes	yes
Time fixed effects	yes	yes
N of observations	48,805	35,719

Note: CCP = Chinese Communist Party. *** $p<0.001$, ** $p<0.01$, * $p<0.05$ based on robust standard errors clustered at the individual-level.

Appendix Figure A1. Average predicted probabilities of self-rated health by subjective social status and household income.