Beyond Constraints: Gender Norms, Identity, and Health Behavior Among Older Indians

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Abstract

We examine how exposure to gender unequal norms shape health behaviors among older Indian adults by exploiting staggered state-level reforms in inheritance laws and the 2005 Hindu Succession Act Amendment. Using data from the Longitudinal Aging Study in India, we construct a continuous measure of deprivation intensity — the number of years an individual lived under unequal inheritance laws prior to reform. At zero deprivation, where individuals have spent their entire lives under equal inheritance laws, men's self-reported health tracks their objective health closely. Women's does not — a gender gap in self-assessment persists even under the more equal legal environment. Each additional year of deprivation deepens this disconnect: frailer women become more likely to report good health, consistent with under-reporting that intensifies with both illness severity and norm exposure. On healthcare utilization, deprivation suppresses care-seeking for both genders, consistent with household-level spillovers operating beyond the identity cost channel. We develop a framework grounded in identity economics that distinguishes preference formation from constraint relaxation as the channel through which norms shape health behavior. Self-reported health — a costless margin requiring no money, time, or household negotiation — provides the sharper test, since constraints cannot bind there. Conditional on objective health measured through a frailty index, women are roughly 10 percent more likely to report good health and use 25 percent less healthcare than comparably frail men. Our findings indicate that legal reforms alter internalized norms, with effects persisting decades after the formative-years window closes.

JEL Codes: J14, J16, I12, I14, K36

Keywords: Self-reported health, Healthcare utilization, Gender norms, Inheritance law, Identity costs, Preference formation

1 Introduction

India ranks 129 out of 146 countries in the Global Gender Gap Index, 142 out of 146 in the Health and Survival subindex[1]. With a rapidly growing aging population, it is projected that by 2046, older adults will outnumber children[2]. Healthcare decisions carry disproportionately higher stakes for this group. Health deteriorates faster, conditions are more likely to become chronic, and the consequences of delayed or foregone care compound quickly. Since older women bear the dual burden of age and gender-based disadvantage in a largely patriarchal society, understanding what drives their health behavior is increasingly urgent.

In this paper, we estimate the causal effect of exposure to gender-unequal norms on health behavior among older Indians. We exploit a quasi-natural experiment in Indian inheritance law. Between 1976 and 1994, five states amended their succession laws to grant daughters equal inheritance rights — the 2005 Hindu Succession Amendment Act (HSAA) extended these rights nationwide. Since all women in our sample eventually received equal rights by the time of survey, the variation we exploit is how long an individual lived under unequal inheritance laws prior to state-level reform. We call this *deprivation intensity*, defined as the difference between the year of enactment in the state and the year of birth for individuals in reform states. Using data from the Longitudinal Ageing Study in India (LASI), we study two margins of health behavior — self-reported health status (SRHS) and healthcare utilization (HCU). They differ in an important way. Self-reporting is essentially costless. It requires no financial resources, time allocation, or household negotiation. Healthcare utilization, on the other hand, demands significant resources and decision-making at the household level. We find sharp results with the continuous measure of deprivation intensity. At zero deprivation — meaning individuals who have spent their entire lives under equal inheritance laws — the relationship between frailty and self-reported health is strongly negative for men but essentially zero for women, indicating that even under the most favorable legal

[1]Source: Global Gender Gap Report 2024 published by World Economic Forum
[2]Source: United Nations Population Fund

environment, women's self-assessments remain disconnected from their objective health. With each additional year of deprivation, frailer women become *more* likely to report good health, consistent with under-reporting that deepens with both illness severity and duration of norm exposure. For healthcare utilization, deprivation suppresses care-seeking for both genders, consistent with household-level spillovers. Against a binary reform indicator, we find suggestive evidence of women in reform states reporting their health more aligned with their objective health, though these effects are not robust across specifications.

Our strongest results come from those against SRHS. It is costless as it requires little to answer a surveyor's question about one's own health. If the gender gap in health behavior were driven solely by resource constraints or restricted agency, it should not appear on a dimension where those constraints do not bind. Finding that norms distort even this costless margin is what makes the preference formation interpretation compelling.

Our results have important implications for policy designing. If constraints are the only relevant mechanism, then equalizing access to resources should close the gap. If preferences are also at play, the gap can persist even after all constraints are relaxed. Women who have internalized "self-sacrifice" may continue to undervalue their health in the absence of any economic barriers.

These causal patterns are consistent with a broader descriptive fact we document. Unconditionally, women report worse health and use marginally more healthcare than men. Taken at face value, this appears internally consistent with women simply being sicker. However, once we condition on an objective measure of health, we find a completely opposite picture. Women are *more likely* to report good health than men at the same level of frailty, and their healthcare utilization falls further below men's with worsening health. We stress that the raw gender gap is misleading — it masks systematic under-reporting and under-utilization that get revealed only once we look at it through the right lens.

Unlike the standard HSA literature, we do not restrict our sample to eligible women in reform states near the reform cutoff. Because we use the reform as a proxy for the normative

environment rather than as a direct treatment, the standard beneficiary-only restrictions would truncate the preference formation channel we are trying to identify. We discuss this choice and its implications in detail in Section 4.

This paper makes four contributions. On the empirical side, first, we extend the literature on inheritance law reform in India, which has documented effects on land ownership (Deininger et al., 2013), educational attainment (Deininger et al., 2019), domestic violence (Amaral, 2017), empowerment (Biswas et al., 2024), mental health (Keskar and Mookerjee, 2024), and participation in household activities (Valera et al., 2018). These findings are broadly consistent with a constraint-relaxing mechanism. The reforms grant access to resources, strengthen bargaining power, and improve outcomes accordingly. Yet a parallel strand documents unintended consequences. Bhalotra et al. (2020) finds that equalizing inheritance rights exacerbated son preference and female foeticide, as sticky norms raised the perceived cost of daughters. Bahrami-Rad (2021) show that female inheritance increased cousin marriage — a mechanism to keep property within the male lineage — as well as reduced women's labor force participation. Anderson and Genicot (2015) documents that stronger female property rights increased household conflict and suicide rates for both men and women. More broadly, conservative norms lower female labor force participation (Alesina et al., 2013), reduce women's bargaining power and agency (Field et al., 2021), and lower educational attainment (Dhar et al., 2019). From a health perspective, rigid norms are associated with higher rates of poor self-assessed health (Bambra et al., 2009) and increased mental distress (Das et al., 2012). This body of work documents that norms affect outcomes, but has largely attributed these effects to binding constraints. We show that norms also operate through a distinct channel — shaping preferences that govern health behavior during the formative years in which those preferences are formed. We study health behaviors measured among older adults surveyed in 2017-2018, long after the reforms were enacted, suggesting that the effects of legal change are not only contemporaneous but leave a lasting impact.

Second, we contribute to the literature tracing adult outcomes to childhood circumstances.

Exposure to disease (Bleakley, 2007, 2010), pollution (Isen et al., 2017), conflict (Akresh et al., 2012), neighborhood environments (Chetty et al., 2016), and safety net access (Hoynes et al., 2016) have all been shown to shape health, earnings, and human capital in adulthood. In each case, the exposure is material and the mechanism is biological or economic. We extend this logic to a different type of exposure — we show that the *institutional* environment during formative years can shape the *preferences* that govern how individuals perceive and act on their own health, long after the exposure window has closed.

Third, we contribute to the literature on self-reported health measurement. A large body of work documents systematic reporting heterogeneity across demographic groups — by gender, age, socioeconomic status, and culture (Butler et al. (1987); Waidmann et al. (1995); Oksuzyan et al. (2019); Onur and Velamuri (2018)) — and typically treats this heterogeneity as measurement error to be corrected. We reframe reporting behavior itself as an outcome to be explained. A natural concern is that the gender differences we observe in self-reported health reflect stable reporting heterogeneity rather than identity costs. But if such heterogeneity were fixed, it would generate a level difference between men and women and not respond to deprivation intensity as we find.

Our fourth contribution is on the theoretical side. We show that gender differences in health behavior can operate not only through economic constraints, but also via *preference formation*. Standard models in health economics (see e.g. Grossman, 1972) treat health as human capital where investments depend on costs and returns. Gender gaps can arise in this framework if women face tighter constraints, and the existing literature has largely taken this route. We develop an alternate mechanism. To formalize this, we adopt Akerlof and Kranton (2000), which posits that individuals derive utility not only from consumption but also from conforming to the identity associated with their social group. Deviation from prescribed norms generates psychological and social costs. In patriarchal societies, gender norms prescribe women to take up a subordinate position in the family — one centered around prioritizing other members' well-being over their own. In this framework, norms

do not merely constrain behavior through barriers — they shape preferences. This can happen through several plausible channels, including observational learning, intrahousehold bargaining dynamics, and the signaling function of legal codification, through which the pre-reform environment strengthens identity costs. We discuss these in detail in Section 2. The framework generates testable predictions that we take to the data.

The identifying variation comes from years of exposure to gender inequality — a girl who spends her formative years in a pre-reform environment is not bargaining over household resources at the age of five. She is absorbing norms about what women deserve. The distortion we document is therefore in preferences, not in binding constraints.

The rest of the paper is structured as follows. In section 2, we develop the theoretical model and provide information on the legal reforms. Section 3 describes the data and construction of key variables. Section 4 presents the empirical strategy. In Section 5, we present our results. Section 6 discusses implications and limitations, and concludes.

2 Theory & Institutional Background

2.1 Framework

Consider an adult individual i who demands health $h_i \in [0, 1]$, where $h = 0$ represents complete prioritization of others' well-being over one's own and $h = 1$ represents full prioritization of one's own health. We distinguish health demand—an individual's perceived need for and priority assigned to their own well-being—from health investment, which may be jointly decided within the household and is subject to resource constraints. Health demand reflects the individual's own decision. We model the direct benefit from health demand as $B(h_i)$, with $B' > 0$ and $B'' < 0$, capturing diminishing marginal returns to health investment. In our model, we formalize only the demand side. Resource and bargaining constraints on health investment are well documented in the literature (Deininger et al., 2019; Heath and Tan, 2020). We take them as given and ask whether preferences can be distorted even absent such

limitations.

Following Akerlof and Kranton (2000), we define the utility function of individual i as:

$$U_i = B(h_i) - I_s(h_i; E_i) - I_o(h_i; E_i) \tag{1}$$

where $I_s(h_i; E_i)$ is the identity loss from one's own actions violating internalized prescriptions, $I_o(h_i; E_i)$ is the identity loss from others' disapproval of those actions, and E_i measures cumulative exposure to a gender-unequal normative environment. We call E_i the *deprivation intensity*. While the full Grossman (1972) model involves health capital accumulation and depreciation, our reduced-form benefit function $B(h_i)$ serves as a tractable approximation that preserves concavity in health returns.

Self-identity cost. We assume

$$I_s(h_i; E_i) = \alpha_s(E_i) \cdot h_i \tag{2}$$

where $\alpha_s'(E_i) > 0$: a woman with greater deprivation intensity experiences greater internal conflict when prioritizing her own health. The linear form implies that identity cost is proportional to the deviation from the traditional prescription $h_i = 0$.

Social sanction cost. We assume

$$I_o(h_i; E_i) = \alpha_o(E_i) \cdot h_i \tag{3}$$

where $\alpha_o'(E_i) > 0$: women raised in environments with stronger gender-unequal norms face or anticipate greater social disapproval for prioritizing their own health.

Exposure technology. Let cumulative exposure to gender-unequal norms be:

$$E_i = \int_0^{a_{ct}} \delta(a) \cdot D_i(a)\, da \tag{4}$$

where $D_i(a) = 1$ if individual i lived in the pre-reform normative environment at age a and $D_i(a) = 0$ otherwise, $\delta(a) \geq 0$ governs the sensitivity of identity formation at age a, and a_{ct} is the individual's current age. The integral runs from birth to current age, allowing both childhood and adult pre-reform experience to contribute to exposure. The weighting function $\delta(a)$ governs the relative importance of different life stages: if $\delta(a)$ is concentrated at early ages, childhood exposure dominates even though E_i accumulates over the full life course.

The empirical counterpart of E_i in our analysis is the number of pre-reform years lived under gender-unequal inheritance law. Five Indian states reformed inheritance law between 1976 and 1994; the Hindu Succession Amendment Act (HSAA) in 2005 extended equal rights nationwide. Within a given cohort, women in reform states have lower E_i than women in non-reform states, because reform arrived earlier in their lives.

Male identity costs. We assume that the identity costs associated with the prescription to prioritize family over self in health are negligible for men: $\alpha_s^m(E_i) \approx 0$ and $\alpha_o^m(E_i) \approx 0$ for all E_i. This does not imply that men face no identity costs whatsoever—masculine norms around stoicism or risk-taking may generate their own distortions in health behavior. The claim is narrower: inheritance reform targets women's property rights and the associated prescriptions for women's self-sacrifice, so the specific identity costs modeled here operate entirely through them.

This asymmetry generates a gender gap in optimal health demand. Men optimize at $B'(h_m^*) = 0$, while women do at $B'(h_f^*) = \alpha_s(E_i) + \alpha_o(E_i) > 0$. The concavity of B guarantees $h_f^* < h_m^*$: women demand less health than men, not because they face tighter constraints, but because identity costs make prioritizing their own health more expensive at the margin.

Our model starts with the premise that exposure to the pre-reform environment strengthens identity costs associated with women's self-sacrifice. But through what channels does the legal status of inheritance shape the norms a woman internalizes? We identify three plausible transmission mechanisms. First, *observational learning*: girls raised in the pre-reform environment observe women lacking property rights, excluded from economic decisions, and

occupying a subordinate position within families. These observations shape beliefs about what is "normal" and "appropriate" for women. Second, *intrahousehold dynamics*: without equal inheritance rights, women have weaker fallback positions in household bargaining (Deininger et al., 2019), and children growing up in such households observe gender dynamics that reinforce prescriptions about women's subordinate role. Third, *signaling and legitimacy*: the legal codification of unequal inheritance signals societal acceptance of gender hierarchy, making women who prioritize their own health susceptible to social sanctions. These channels are mutually reinforcing and difficult to disentangle empirically. Our model does not require identifying which channel dominates—only that, in aggregate, years spent in the pre-reform environment increase the identity costs associated with prioritizing one's own health.

Comparative static on E. This is the core result that motivates our empirical exercise.

$$\frac{\partial h^*}{\partial E} = \frac{\alpha_s'(E) + \alpha_o'(E)}{B''(h^*)} < 0$$

since $\alpha_s'(E) > 0$, $\alpha_o'(E) > 0$, and $B''(h^*) < 0$. Optimal health demand decreases with deprivation intensity.

The zero-deprivation baseline. The comparative static above establishes that health demand decreases with deprivation intensity. But the model also speaks to what happens at the boundary. We assume $\alpha_s(0) > 0$ and $\alpha_o(0) > 0$, which means even a woman with zero pre-reform exposure ($E_i = 0$) faces positive identity costs. These baseline costs reflect prescriptions embedded in the broader environment - familial expectations, religious teachings, and community norms about women's self-sacrifice that operate independently of inheritance law. A woman born the day after reform still grows up in a society where the prescription to prioritize family over self is transmitted through channels that the law did not create and its reform does not eliminate.

This assumption has a sharp implication. Since $\alpha_s(0) + \alpha_o(0) > 0$, we have $h_f^*(0) < h_m^*$: a gender gap in health demand persists even at zero deprivation intensity. Reform narrows

the gap by reducing the legal-environment component of identity costs, but it does not close it entirely. This prediction is theoretically important because it distinguishes the identity cost model from a pure constraint channel. If the gender gap in health demand operates entirely through resource constraints that reform relaxes, then women with zero deprivation intensity should show no residual gap relative to men. A persistent gap at $E_i = 0$ indicates that preferences themselves are distorted by sources beyond the reach of legal reform.

Prediction 1 (Zero-Deprivation Baseline)**.** *A gender gap in health demand persists even among women with zero deprivation intensity ($E_i = 0$). This residual gap reflects identity costs from non-legal sources that inheritance reform does not address.*

Prediction 2 (Duration Effect)**.** *Among women, more years of exposure to the pre-reform environment (higher E_i) leads to lower adult health demand.*

Why preference formation, not constraint relaxation. The identifying variation in our analysis comes from years of exposure to gender inequality. A girl who spends her formative years in a pre-reform environment is not bargaining over household resources at age of five - she is absorbing norms about what women deserve. The channel through which formative years shape adult health demand cannot plausibly be direct economic empowerment. It must operate through preference formation.

Self-reported health as a costless margin. The model predicts that identity costs reduce health demand along margins that we observe empirically: self-reported health and healthcare utilization. But the two margins reflect different aspects of health demand.

Healthcare utilization requires money, time, and other household resources over which women may have limited control. A finding that women with greater deprivation intensity exhibit lower utilization is therefore consistent with two stories - 1) identity costs suppress demand (the preference channel), or binding resource and bargaining constraints suppress investment (the constraint channel). These are observationally equivalent on the utilization margin.

Self-reported health breaks this equivalence. Answering a surveyor's question about one's own health requires no material resources, time allocation beyond the interview itself, and household negotiation. Constraints do not bind on this margin. If women with greater deprivation intensity nonetheless report worse health, mapping their objective health status into subjective assessments less favorably than men with comparable health, then the constraint channel cannot account for the distortion. What remains is the identity cost interpretation: these women have internalized prescriptions that make even the cognitive act of acknowledging one's own health needs costly.

This asymmetry structures our empirical strategy. Finding identity cost effects on both margins is consistent with the model but not conclusive, since utilization effects allow for an explanation related to constraint relaxation. Finding effects on SRH—the costless margin—is the sharper test, because it isolates the preference channel on a margin where constraints are inoperative.

A concern here could be that gender differences in SRH reflect measurement error rather than identity costs. If this reporting heterogeneity were fixed across women, it would generate a level difference in SRH between men and women but would not respond to deprivation intensity. The model's identifying variation is not the gender gap in SRH per se but how that gap changes with E_i. A finding that the frailty-to-SRH mapping weakens systematically with deprivation intensity is difficult to attribute to stable measurement error, because the "error" itself varies across a variable that the identity cost model predicts should matter.

Moreover, the model does not require us to distinguish between two effects of the SRH. Identity costs could reduce SRH through lower health demand leading to genuinely worse health over time, or through suppressing the willingness to acknowledge one's own health needs at the point of reporting, or both. These channels are conceptually distinct but flow from the same parameters (α_s and α_o) and reinforce the same empirical pattern. The important point is that neither channel operates through resource constraints. Whether a woman with high deprivation intensity reports worse health because she *is* less healthy (from

a lifetime of deprioritizing her own care) or because she is less willing to *report* true health (because doing so would violate internalized prescriptions), the underlying mechanism is preference distortion, not constrained optimization.

2.2 Institutional Background

Prior to 2005, Hindu inheritance law excluded women from coparcenary rights[3] to ancestral joint family property (Agarwal, 1995; Halder and Jaishankar, 2008). The Hindu Succession Act (1956) granted women absolute property rights in self-acquired assets[4] but maintained this exclusion for joint family property[5], with coparcenary rights remaining restricted to male heirs (Agarwal, 1995; Halder and Jaishankar, 2008).

Between 1956 and 2005, five Indian states independently reformed their inheritance laws - Kerala in 1976, Andhra Pradesh in 1986, Tamil Nadu in 1989, and Maharashtra and Karnataka in 1994 (Agarwal, 1995). The Hindu Succession Amendment Act (HSAA) in 2005 extended coparcenary rights to women nationwide, ensuring equal inheritance rights in joint family property for men and women (Agarwal, 1995; Halder and Jaishankar, 2008). We call these the *reform states*.

The exclusion of women from coparcenary rights was not merely an economic constraint, rather it codified a normative view of daughters as transient members of the natal family. Under the patrilocal kinship system[6] prevalent across much of India, daughters leave their parental home at the time of marriage, and move in with the husband and his parents (Agarwal, 1994; Dyson and Moore, 1983). The denial of inheritance rights reinforced this asymmetry. Daughters were not stakeholders in the family's inter-generational wealth, and their claims on parental resources were addressed through dowry rather than property (Botticini and

[3]Coparcenary rights are legal claims by birth to an automatic, independent share in ancestral joint family property. Without such rights, women could only inherit through succession after the male owner's death.

[4]Self-acquired assets refer to property earned, purchased, or inherited by an individual from sources outside the joint family line.

[5]Joint family property refers to ancestral wealth accumulated over generations and collectively owned by family members.

[6]A patrilocal kinship system is a residential pattern where a married couple lives with or near the husband's family.

Siow, 2003; Roy, 2015). The legal structure thus both reflected and perpetuated a set of norms around women's place in the family - prescriptions that, in our theoretical framework, constitute the normative environment captured by E_i.

Importantly, the gap between legal reform and actual property transfer has been substantial. Roy (2015) finds that the state-level amendments failed to increase the actual likelihood of women inheriting property. Instead, parents circumvented the law by gifting land to sons and compensating daughters through education or higher dowries. Agarwal et al. (2021) document persistent gender gaps in land ownership decades after reform, and Agarwal and Naik (2024) show that women who approach courts face opposition from immediate family members in the majority of cases. This pattern of low compliance matters for our identification strategy. If the reform's effects on downstream outcomes operate primarily through actual transfer of resources, then low compliance should attenuate those effects. The fact that inheritance reform has nonetheless been shown to increase bargaining power (Deininger et al., 2019), and labor supply (Heath and Tan, 2020) despite limited property transfer suggests that the reform operates at least partly through internalized preferences rather than purely through resource transfer - precisely the mechanism our model formalizes.

3 Data

We use data from the Longitudinal Aging Study in India (LASI), a nationally-representative scheduled to be longitudinal survey of India's population aged 45 and older (Bloom et al., 2021). Specifically, we employ the Harmonized LASI dataset, Version A.3 (April 2023), developed by the Gateway to Global Aging Data[7]. As of now, only one wave of data is available, making our study cross-sectional in nature.

To our knowledge, this is the first dataset that focuses on India's older population. It collects information across multiple domains - health, cognition, labor supply and family

[7]The Harmonization project was supported by the National Institute on Aging (NIH grants R01 AG042778, 2R01 AG030153, 2R01 AG051125). Further details are available at `https://g2aging.org/`

structure to name a few. This makes it an ideal resource for studies targeting the aging Indian population. An additional advantage of the Harmonized version is the enhanced usability through standardized variable definition and measurements that align with similar datasets from other countries. This facilitates cross-country comparisons if required.

Our sample comprises of approximately 73,000 respondents from 43,300 households, of which 57 percent are women. The average age at the time of interview is 58 years. 53 percent report to be literate, with 65 percent residing in rural areas. 72 percent identify themselves as scheduled caste (SC), scheduled tribe (ST), or other backward class (OBC). 77 percent of the sample are married, 20 percent are widowed, and 73 percent identify as Hindu.

LASI contains rich information on health and healthcare - self-reported health status, observed diagnoses, functional limitations, healthcare utilization (doctor visits, hospital stays, etc.), and cognitive abilities. We derive several measures from these data. First, using self-reported health, we create a binary indicator for reporting good health or better. 64 percent of the sample report that their health is at least *good*. We also assess functional limitations using Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs), both collected directly from respondents. ADLs capture basic self-care tasks such as bathing and eating, while IADLs measure more complex, cognitively-demanding skills required for independent living, such as managing finances, medication, and transportation. These measures provide complementary perspectives on how health conditions translate into day-to-day functioning. Using these as well as an extensive list of diagnosed conditions, and lifestyle factors, we construct a "*frailty index*." We discuss this index in greater detail in Section 4. We also construct a *healthcare utilization index* using individual variables of healthcare utilization. This is discussed further in Section 4.

4 Empirical Strategy

Frailty Index: Following Russo et al. (2024) and therein Searle et al. (2008), we measure underlying health conditions using a frailty index - a ratio of accumulated health deficits to total deficits considered. The baseline index comprises 35 binary deficits, equally weighted, across five categories:

1. Activities of Daily Living (ADLs): Basic self-care tasks
2. Instrumental Activities of Daily Living (IADLs): Complex tasks for independent living
3. Functional Limitations: Physical challenges (climbing stairs, walking, lifting)
4. Diagnoses: Formally identified conditions (diabetes, cancer, lung disease, heart conditions)
5. Addictive Diseases: Obesity and smoking history

The frailty index offers a few key advantages. First, it strongly predicts major life outcomes - nursing home entry, disability recipiency, and mortality (Russo et al., 2024). Second, its transparent construction makes results directly interpretable - each deficit carries equal weight, and the index ranges from 0 (no deficits) to 1 (all deficits present), providing an intuitive measure of biological aging. Third, the index captures overall health load, and not individual conditions - for our purposes, two individuals with different diagnoses but same frailty are comparable. Fourth, our mechanisms are about norms affecting investments in health broadly, and therefore an aggregate measure fits better than individual diagnoses. Fifth, condensing 35 individual conditions into one index helps us save statistical power and avoid potential issues regarding dimensions and collinearity.

We construct two versions of this index. The baseline applies equal weights to all 35 deficits. We also construct an augmented version using principal component analysis on the deficits, following Russo et al. (2024), who report that both versions perform equally

well. For regression analysis, we standardize both versions for ease of interpretation. Table 2 reports summary statistics for all variables included in the index.

Dependent variables: Our model makes a prediction about the optimal demand for health, h^*. In our empirical setting, this maps into two separate outcome variables - self-reported health (SRHS) and healthcare utilization (HCU).

For healthcare utilization, the link is relatively straightforward. A higher h^* leads to more visits to the doctor, more preventive care and treatment-seeking, etc. LASI collects detailed information regarding this. For purposes of tractability, we construct an normalized index using factor analysis where a higher number means greater utilization, as our theoretical mechanisms operates on overall health demand and not specific channels of utilization. The index contains standardized versions of key healthcare utilization indicator variables for hospital stay, doctor visits, insurance, and outpatient clinic visits. It also contains standardized versions of continuous measures such expenditure on hospital stays, outpatient visits, insurance premium and expenditure on drugs.

In case of SRHS, the link is a bit more nuanced. SRHS involves the simultaneous operation two separate channels. First, the *actual health demand* where women with lower h^* invests less in health, leading to genuinely worse health outcomes. Lower SRHS among women exposed to gender-unequal norms reflects this health deficit. Second is a potential *reporting channel* - identity costs may also discourage acknowledgment of health problems. We do not separately identify these channels. Our empirical estimates of SRHS capture the combined effect of lower health investments that produces actual health deficits as well as any associated reporting effects, both stemming from the same identity cost mechanism. Empirically, we are unable to disentangle one from the other.

In LASI, SRHS is measured using a 5-point scale, where an individual is asked how they feel about their own health and they can answer as follows: Excellent, Better, Good, Worse, or Worst. We reduce this variable into a binary measure of "Good Health", where the variable takes a value of 1 if an individual reports SRHS as "Good" or higher. It takes a value of 0

otherwise.

Exposure to Inheritance Law Reforms: As mentioned in Subsection 2.2, between the years 1956 and 2005, 5 Indian states had reformed the laws surrounding inheritance in their respective states to bring in more parity between men and women. We utilized the variation in the timing of these reforms to estimate the causal effect of gender-equalizing environment brought about by legal reforms.

We construct a measure of *deprivation intensity* - the number of years an individual i in state s spend without the reform.

$$Deprivation_Intensity_{is} = EnactmentYear_s - BirthYear_{is}$$

This variable measures the number of years a person lives without the legal provision of equal access to inheritances. For example, a woman born in Kerala in 1960 has a deprivation intensity of 1976 - 1960 = 16, whereas a woman born in the same state in the year 1980 has 0.

What needs to be noted here is that the central government had implemented a nation-wide reform in 2005 by passing the Amendment to Hindu Succession Act. This means that by 2018, when these people are entering the survey, they all have some exposure to the reforms. However, birth in the reform states lead to earlier access to the reform and hence lower value of deprivation intensity[8].

The variation comes from two sources. First, *state-level timing* - five states enacted reforms in different years, while non-reform states waited until 2005. Second, *cohort variation within reform states* - birth year determines exposure to unequal norms before state-level reform occurred.

We interpret deprivation intensity as exposure to gender-unequal norms[9]. Higher

[8]Migration can be a potential concern here. We drop observations where the state of birth and state of residence at the time of interview do not match. This does not rule out the possibility of temporary migration in between, but that is a data constraint we have no way of fixing. If anything, this creates a downward bias on our estimates - our results, if indeed plagued heavily by this, reports a lower bound

[9]We deliberately avoid using the term "exposure intensity" because we want to measure directly the

deprivation means more years under legal regimes that excluded women from inheritance which in turn may shape women's internalization of gender roles and bargaining power, with downstream effects on health investment and health outcomes. We deliberately stay away from an event study design even though we have multiple cohorts of women with differential exposure to unequal gender norms. This is because we do not have a panel structure in the data. We only have one wave of the survey till date. So our outcome variable is only observed at one point in time. To keep consistent with that, we develop this measure of intensity which also records a variable at one point in time only.

Unlike the standard HSA literature, we do not restrict our sample to Hindu, Jain, Sikh and Buddhist women in reform states near the reform cutoff. Our rationale is as follows. Standard restrictions are designed to estimate the average treatment effect on direct beneficiaries consistent with a constraint relaxation story where the reform grants resources to a legally defined group and their outcomes improve. Our question is different. We use the reform as a proxy for the latent environment, not as a treatment. Normative shifts transcend legal and religious boundaries — a Muslim woman in Kerala still lives in a state where gender norms shifted after 1976, even though the HSA does not govern her inheritance. Restricting the sample to the legally eligible would be appropriate for studying outcomes correlated with constraint relaxation like likelihood of inheritance, but would truncate the very channel we are trying to identify. The pattern of low compliance reinforces this. Roy (2015) finds that state-level amendments failed to increase the actual likelihood of women inheriting property, and Agarwal et al. (2021) document persistent gender gaps in land ownership decades after reform. If the mechanism was only resource transfer, restricting our sample to direct beneficiaries would sharpen identification. However, since the mechanism is normative, we want the broader variation. The deprivation intensity measure itself requires cohort breadth — restricting to narrow birth cohorts near the reform cutoff would discard a significant portion of the intensity variation our identification is built on.

extent of deprivation from pro-social reforms. Literature that includes "exposure intensities" typically refer to exposure to reform or better conditions.

Regression Specifications: We use four regression specifications to accommodate our analysis. We begin with a simple descriptive estimation of the effect of health outcomes (measured through the frailty index) on our two dependent variables (SRHS and HCU) as follows:

$$depvar_i = \beta_0 + \beta_1 frailty_i + \gamma \mathbf{X}_i + \varepsilon_i \tag{5}$$

$depvar_i$ is either the binary measure of good health or the healthcare utilization index. $frailty_i$ is the frailty index. For tractability, we construct three separate indices: 1) sum of responses to activities that the respondent reported to have difficulty, 2) standardized version of measure (1), and 3) a standardized score constructed from the first principal component of all these measures. For all three measures, a higher number indicates higher frailty. X_i is a vector of demographic controls that includes dummies for marital status, caste, religion, being in a rural area, and being literate. Unless otherwise mentioned, all regressions include birth year fixed effects and the standard errors are clustered at the household-level. In our baseline regressions, the parameter of interest is β_1 which captures the effect of frailty on the probability of reporting good health or on healthcare utilization.

To estimate the heterogeneity across gender, we modify Equation (5) to include a female dummy and interact that with all other covariates in the model. This is mathematically equivalent to running regressions on male and female sample separately, but allows us to estimate the fixed effects more precisely since we are using a larger sample.

$$\begin{aligned} depvar_i = \alpha_0 + \alpha_1 \mathbf{1}(Female)_i + \alpha_2 frailty_i + \omega \mathbf{X_i} \\ + \alpha_3 \mathbf{1}(Female)_i \times frailty_i + \Omega \mathbf{1}(Female)_i \times \mathbf{X_i} + \varepsilon_i \end{aligned} \tag{6}$$

Here, α_3 is our parameter of interest - if the dependent variable is SRHS it reflects the

differences in the probability of reporting good health between men and women, conditional on frailty. If the dependent variable is healthcare utilization index, it reflects the differences in healthcare utilization among men and women, conditional on having the same level of frailty.

To begin the analysis with the reform laws we first run a simple descriptive regression on the full sample. We use an indicator for whether a state has reformed its inheritance laws before the national amendment kicked in, in 2005. For this we use the following specification:

$$\begin{aligned} depvar_i = \alpha_0 + \alpha_1 \mathbf{1}(Female)_i + \alpha_2 frailty_i + \alpha_3 \mathbf{1}(reformstatus)_i \\ + \alpha_4 \mathbf{1}(reform_status)_i \times \mathbf{1}(Female)_i \times frailty_i \\ + \omega \mathbf{X_i} + \Omega \mathbf{1}(Female)_i \times \mathbf{X_i} + \varepsilon_i \end{aligned} \tag{7}$$

The variable $(reform_status)_i$ is just an indicator for belonging to a state that had a reform prior to 2005. This variable takes a value of 1 for Kerala, Maharashtra, Tamil Nadu, and Karnataka and a value of 0 for other states in our sample. The coefficient of interest here is α_4. This gives us an estimate for the effect of belonging to a reform state on SRHS and on healthcare utilization, conditional on having the same level of frailty.

As a continuation of the above analysis we run the above specification for our subsamples of men and women separately, as follows:

$$\begin{aligned} depvar_i = \alpha_0 + \alpha_1 frailty_i + \alpha_2 \mathbf{1}(reformstatus)_i \\ + \alpha_2 \mathbf{1}(reform_status)_i \times frailty_i \\ + \omega \mathbf{X_i} + \varepsilon_i \end{aligned} \tag{8}$$

The coefficient of interest here is α_3. It estimates the effect of belonging to a state which

has enacted a reform vs belonging to one that has not, conditional on the same level of frailty, separately for women and men.

Finally, we run a regression specification utilizing the measure of deprivation intensity. For this we only run the regressions on sub-samples of women and men separately. We do not utilize the full sample. This equation is specified as follows:

$$\begin{aligned} depvar_i = \alpha_0 + \alpha_1 frailty_i \\ + \alpha_2 (deprivation_intensity)_i \times frailty_i + \\ + \alpha_3 deprivation_intensity + \omega \mathbf{X_i} + \varepsilon_i \end{aligned} \tag{9}$$

The coefficient of interest here is α_2 which gives us the effect of an additional unit (year) of deprivation from reform on SRHS or healthcare utilization, conditional on the same level of frailty for men and women separately.

It should be noted here, that we are aiming to identify how deprivation from a state inheritance law reform incrementally affects under-reporting and healthcare utilization among women and men separately. We recognize that under-reporting or under-utilization of healthcare, as a function of improving gender norms, is likely to go up with age. Younger women are generally expected to be exposed to better gender norms and a improved sense of self worth and perception of the importance of their own health. So, they are generally likely to under-report less. What we are trying to capture is the differential impact of reform on under-reporting. Simply put, our question is as follows: if we compare two women (men) of the same age and frailty level, controlling for all other characteristics, does the woman (man) belonging to a non-reformed state under-report more than the woman (man) from the reformed state? This is an intensive margin estimate. On the extensive margin, we want to know whether belonging to a reformed state reduces under-reporting for women of all age cohorts. A similar thougth process applies for healthcare utilization as well.

5 Results

We begin our analyses by establishing some descriptive patterns of raw gender disparity in health behaviors. In Table 3, women are 6.8 percentage points less likely to report good health than men. This gap narrows only slightly to 5.9 percentage points once we include our demographic controls. Both estimates are statistically significant at 1 percent. With respect to the unconditional mean, this translates into an 8-9 percent reduction. Women also exhibit significantly higher healthcare utilization (Table 3, Panel B) - against the baseline mean, they are associated with 11 percent higher rate of healthcare utilization, an effect that is statistically significant at 1 percent. Taken at face value, this pattern appears to be internally consistent - women report worse health and also seek more healthcare. However, this unconditional relationship masks the concern about whether women are genuinely sicker than men, whether their health behaviors are systematically different conditional on health, or both. Therefore, it is important to disentangle this relation by their underlying health status.

In Table 4, we explore the relationship between health behaviors and frailty. Both measures of frailty, the standard one as well as the augmented one are stong predictors of health behavior. A one standard deviation increase in frailty reduces the probability of reporting good health by 19 percentage points in terms of the standard measure, and 18 percentage points when we consider the augmented one. Against a baseline mean of 0.63, these represent approximately 30 percent reduction. For healthcare utilization, the standard frailty index has a point estimate of 0.007, and the augmented one has 0.006 - both statistically significant at 1 percent. This is roughly a 50 to 58 percent higher association. Overall, frailty tracks both self-reported health and healthcare utilization in the expected direction - sicker people report worse health and seek more care.

In Table 5, we interact frailty with gender. The main effect of frailty captures the male-specific relationship - a one standard-deviation increase in frailty is associated with 20.3 percentage point reduction in the likelihood of reporting of good health. With regards to

healthcare utilization, the male-specific utilization coefficient is -0.008, which means frailer men are less likely to use healthcare, not more. This in itself is notable - even among men, worse objective health does not directly translate into greater healthcare-seeking behavior. Our parameter of interest here is the interaction between frailty and female dummy. For self-reported health, we find that conditional on health, women are 2.1 percentage points more likely to report good health. Against a male-specific slope, of 20.3 percentage points, this represents an approximately 10 percent weaker mapping from actual health to self-assessment. With regards to the augmented frailty index, the effect size is smaller, but in the same direction. In both cases, the point estimates are statistically significant at 1 percent. In terms of healthcare utilization, we find a negative and statistically significant interaction - the points estimates for both the standard and augmented frailty are -0.002. This means that for a level of frailty, women's utilization rate drops 25 percent more than men. What needs to be highlighted is that worse objective health is associated with less care-seeking across the board. This in itself speaks to structural barriers to healthcare uptake in India. The negative point estimate of the interaction with female dummy underscores a worrying pattern - at every level of worsening frailty, women's care-seeking persistently remain below than of men's.

In Table 6, we introduce the policy variation. We ask whether being born in states that reformed their inheritance laws before the nationwide amendment in 2005 modifies the behavioral distortion we observe in Table 5. Here the reform is binary - 1 if born in any one of the five reform states, 0 otherwise. These results should be read as a first pass before we move onto the continuous measure of intensity.

Panel A of Table 6 estimates a pooled model with a triple interaction between a female dummy, being born in a reform state, and frailty as the paramter of interest. For self-reported health, the coefficient corresponding to the standard measure of frailty is -0.016 and is marginally significant, and does not survive the switch to the augmented version with an estimated coefficient of -0.012. It is worth noting that there is an alternative, and equally

interesting interpretation to this three-way interaction. The -0.016 also implies that in reform states, women are 1.6 percentage points less likely to report being in good health than men. Recall that in Table 5, conditional on frailty, women are more likely to report good health. The negative sign here implies that the reform states at least partially offset the sign. This can reflect more honest reporting, and / or other channels. For healthcare utilization, the triple interactions are statistically insignificant.

In Panels B and C, we split the sample by gender. This is a little different than a pooled one - the split sample estimates do not mechanically recover the three-way interaction because the pooled model treats other covariates equally in terms of gender, while the split model does not. But they are informative any way. In Panel B, we report on men. The coefficient on the interaction between reform dummy and frailty is positive and significant. We interpret this as follows - first, the baseline likelihood of reporting good health is lower in reform states, and this interaction attenuates that to some extent. Second, frailer men are more likely to report good health. This cuts against our framework - if men are the reference group whose reporting we treat as benchmark in Table 5, reform should not have had any effect. A likely explanation for what we are seeing is that the reform state dummy is picking up on state-level differences in health infrastructure, urbanization etc that affect all, and not just women. For women in Panel C, we find diverging results. We find a substantially meaningful increase in healthcare utilization for women in reform states (point estimate of 0.001 against a mean of 0.012), but no statistically significant effect in terms of self-reporting.

Table 7 replaces the reform status indicator with a continuous measure of deprivation intensity, and estimates the effect separately for men and women. Unlike the binary measure, this one exploits two layers of variation - within state and cross-cohort. Two women born in the same reform state, but in different years would be labeled as 1 for the dummy measure, but they experience different duration of deprivation.

The main effects of frailty are evaluated at zero deprivation intensity, i.e they capture the link between health and health behavior for someone who has spent their entire life under

equal inheritance laws. For men, this coefficient is -0.264 with a p-value less than 0.001. This means that men with more health issues are less likely to report good health. This relation is strong and robust to alternate version of frailty and runs in the expected direction. For women, the same estimate is 0.002 with a p-value of less than 0.001. We interpret this as women's self-assessment significantly differing from men, even in the presence of gender-equal norms. The contrast with men is enormous, 0.264 against 0.002. The augmented frailty index also tells a similar story (-0.197 versus 0.001).

The interactions with deprivation intensity show how this baseline pattern evolves. For men, the interaction is 0.001 ($p < 0.001$) with standard frailty. For women, the interaction is 0.002 ($p < 0.001$) which is twice the magnitude. Since women start from a frailty main effect of essentially zero, the interaction means that with each additional year of deprivation, frailer women become actively more likely to report good health. This is not just an absence of honest reporting - it is positive underreporting that intensifies with both severity of illness and duration of norm exposure. With augmented frailty, the interaction remains significant and positive for women (0.001, $p < 0.001$) but drops to zero for men, sharpening the gender contrast further which can reflect underlying differences in measuring health using the frailty index.

With regards to healthcare utilization, both genders show deprivation suppressing care-seeking. The main effects are negative, 0.00008 for men, and 0.00004 for women, and the interactions with frailty are also negative for both. The interaction pattern suggests that the utilization channel responds to forces beyond identity costs alone access constraints, household bargaining over expenditures, provider-side decisions that may affect men's care-seeking as well.

In the context of this analysis, it is useful to think of all women as the treated group (see Section 4). All men are thought of as spillover. This means if we see any effects for men, they are a spillover effect of women's outcomes. The idea is that the effect of HSAA on our outcomes that we see through preference formation of women spill over to the men that

these women are married to. This is further supported by our results in Table 7. We see here significant interaction against both measures of frailty for healthcare utilization and not self-reported health status. Self-reported health status is essentially a costless outcome to report for women, and even there we see women under-reporting significantly. Men's results for SRHS are weak. This is indicative of our theory that it is not just constraint relaxation, but also preference formation that leads to women's health outcomes being lower than that of men. If it was just contraint relaxation, we would see significant effects for HCU but not for self-reported health status.

6 Conclusion

India has been experiencing a demographic shift for the past decade or so. With falling total fertility rates and rising life expectancy, we are ushering in a larger share of older adults in the population. This has led to various policy concerns around rising eldercare burdens, demand for healthcare, and disparities within the older population along these lines. The experience has been heterogeneous along various dimensions. One of the most significant among these dimensions is gender. Women in India have historically had worse health outcomes and access to healthcare than men. This has naturally permeated to the older female population as well. Due to prevalent gender norms and poor bargaining power, there is anecdotal evidence around women being more likely to ignore or underplay their health issues compared to men, leading to various intersectional comorbidities and lower life expectancy.

To allow us to explore such disparities in a structured manner, we first develop a theoretical framework in close alignment with the demand for health and identity perception literature to accommodate the possibility that one's gender identity can be a decisive factor in shaping one's perception and importance of their own health and consequently their health demand.

Underplaying and under-reporting one's health is closely tied to perceptions around one's healthcare needs. Women under-reporting their own health status can also lead to lower

healthcare utilization. Usually healthcare utilization is tied to concrete financial and logistical barriers. However, our work explores the possibility that even before such barriers kick in, women's internal calibration of their own health plays an important role in their health outcomes. This separates our paper from the standard access-and-resources story in the health economics literature where most of the gender gaps in healthcare is found along the lines of financial constraints, distance to facilities, household bargaining over expenditures. This is evidenced by the fact that strongest results seem to be at the costless margin i.e SRHS and not healthcare utilization.

The dataset we use in this paper, focuses on the health outcomes of the elderly in India. we estimate how likely older women are to under-report their health and under-utilize heathcare compared to men. This focus on the older population enables us to examine the overlapping vulnerabilities of gender, old age, and higher disease burden.

We find descriptive evidence of women under-reporting their health compared to men at similar levels of frailty. We also utilize a legal reform targeted towards bringing more gender equity in inheritance structure between men and women. This is intended to serve as a proxy for improving gender norms and bargaining power. There is variation in state-level take-up of this amendment between 1970-2000 after which it was finally nationalized in 2005. We find evidence that the length of time spent in a state which has not yet enacted the amendment has a positive effect on the under-reporting of women's health problems. This implies women who have spent more time in an environment with better gender norms tend to underplay their health conditions less. A more accurate perception of their own health should ideally lead to higher healthcare utilization as well. However, we do not find very pronounced effects on healthcare utilization. We do find evidence of lower healthcare utilization associated with worse gender norms, but the effect sizes are quite small. This could be because healthcare utilization is a downstream of multiple decisions recognizing illness, deciding to seek care, negotiating household resources, choosing a provider, actually reaching a facility. Each step introduces noise from factors other than identity costs. This indicates that policies aimed

at improving women's legal rights and bargaining power could have a positive effect on their self-esteem and encourage them to value their health and well-being more. It is worth exploring how improved importance of one's own health could transition to higher healthcare utilization for women, and which barrier factors in to what extent in this transition process.

The phenomenon of under-reporting for women is especially relevant in absence of concrete diagnosed conditions, when women are perceiving their health based on the degree of difficulty faced in activities of daily living, pain and cognition. Such perception could lead to undiagnosed and untreated health conditions which would ultimately lead to adverse health outcomes for elderly women.

The men in our sample serve as a spillover group and provide some valuable insights. As expected men's self-reported health is negatively associated with increasing frailty. This when compared to women is striking. For women we find a positive association between frailty and self-reported health. Moreover, we find spending longer periods of time in places with adverse gender norms have a negative effect on men's healthcare utilization as well. At a superficial level, there could be spillovers from improved gender norms within the household. If empowered women have higher bargaining power and say in household decision-making, men may adjust their behaviour accordingly. This could lead to higher healthcare utilization not just for women, but at the household level.

Further research should focus on how effective policy can be designed to encourage women to improve the valuation and importance of their own health and mental well-being. We should also examine what patterns of under-reporting and under-utilization of healthcare exist among women of younger ages using more general surveys like the National Family Health Survey (NFHS), and see if these patterns of under-reporting are different between older and younger cohorts. It is also worth exploring if reforms that empower women in general have an effect on the health related perceptions of younger cohorts of women and what kind of variations exist therein.

7 Declaration of generative AI and AI-assisted technologies in the manuscript preparation process

During the preparation of this work we have used Claude (Anthropic) to assist with editing, and structural reorganization of the manuscript. Claude was not used to synthesize literature, identify research gaps, generate ideas, or produce any portion of the manuscript. All AI-assisted output have been carefully reviewed, edited, and adapted to ensure the manuscript represents our authentic and original contribution. We take full responsibility for the content of the published article.

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8 Tables & Figures

Table 1: Summary statistics of demographic variables

Variable	Mean	SD	Min	Max	N
Female	0.58	0.49	0	1	73,408
Age at the time of interview	57.92	11.70	18	116	73,408
Literate	0.53	0.50	0	1	73,395
Marital Status:					
Married	0.77	0.42	0	1	73,408
Partnered	0.01	0.08	0	1	73,408
Separated	0.01	0.08	0	1	73,408
Divorced	0.01	0.09	0	1	73,408
Widowed	0.20	0.40	0	1	73,408
Never married	0.01	0.11	0	1	73,408
Lives in rural areas	0.65	0.48	0	1	73,408
Caste					
Scheduled Caste	0.17	0.37	0	1	72,830
Scheduled Tribe	0.18	0.38	0	1	72,830
Other Backward Caste	0.38	0.49	0	1	72,830
Upper caste	0.27	0.45	0	1	72,830
Religion					
Hindu	0.73	0.44	0	1	73,402
Muslim	0.12	0.32	0	1	73,402
Christian	0.10	0.30	0	1	73,402
Sikh	0.03	0.16	0	1	73,402
Buddhist	0.01	0.11	0	1	73,402

Table 2: Summary statistics of frailty variables

Variable	Mean	SD	Min	Max	N
Frailty index	0.15	0.14	0	1	73,408
Recent health conditions (last 2 years):					
Had diarrhea/gastroenteritis	0.12	0.33	0	1	73,168
Had typhoid	0.05	0.22	0	1	73,168
Had anemia	0.04	0.20	0	1	73,165
Chronic conditions (ever had):					
High blood pressure	0.28	0.45	0	1	73,207
Diabetes	0.12	0.33	0	1	73,204
Cancer	0.01	0.08	0	1	73,212
Lung disease	0.02	0.14	0	1	73,213
Heart problem	0.03	0.18	0	1	73,214
Arthritis	0.11	0.32	0	1	73,155
Stroke	0.02	0.13	0	1	73,213
High cholesterol	0.03	0.18	0	1	73,212
Osteoporosis	0.03	0.18	0	1	73,155
Kidney stones	0.03	0.17	0	1	73,190
Lifestyle factors:					
Ever smoked	0.17	0.37	0	1	72,751
Uses smokeless tobacco	0.18	0.39	0	1	72,752
Activities of daily living (some difficulty):					
Walking across room	0.04	0.20	0	1	73,091
Dressing	0.04	0.20	0	1	73,091
Bathing/showering	0.04	0.20	0	1	73,091
Eating	0.04	0.20	0	1	73,091
Getting in/out of bed	0.07	0.25	0	1	73,091
Using the toilet	0.10	0.30	0	1	73,091
Instrumental activities of daily living (some difficulty):					
Walking 100 yards	0.21	0.41	0	1	73,096
Shopping for groceries	0.13	0.33	0	1	73,086
Using telephone	0.17	0.38	0	1	73,033
Managing money	0.15	0.36	0	1	73,091
Preparing hot meal	0.09	0.29	0	1	73,091
Taking medications	0.09	0.28	0	1	73,091
Doing work around house/garden	0.14	0.35	0	1	73,091
Physical limitations (some difficulty):					
Stooping/kneeling/crouching	0.42	0.49	0	1	73,097
Getting around	0.17	0.38	0	1	73,091
Climbing one flight of stairs	0.40	0.49	0	1	73,097
Getting up from chair	0.31	0.46	0	1	73,097
Pushing/pulling large objects	0.36	0.48	0	1	73,096
Reaching/extending arms up	0.13	0.34	0	1	73,097
Lifting/carrying 5 kilos	0.24	0.43	0	1	73,096
Sitting for 2 hours	0.28	0.45	0	1	73,097
Healthcare utilization:					
Any hospital stay (previous year)	0.07	0.25	0	1	72,602
Any out-of-pocket medical expense	0.53	0.50	0	1	73,319
Observations	73,408				

Table 3: Health behaviors and gender

	Panel A: Self-reported health		Panel B: Healthcare utilization	
	(1)	(2)	(1)	(2)
Female	−0.068***	−0.059***	0.000**	0.001***
	(0.003)	(0.004)	(0.000)	(0.000)
Demographic controls	No	Yes	No	Yes
R-squared	0.050	0.065	0.007	0.020
Observations	72,445	71,874	71,088	70,507
$\overline{Y}$	0.635	0.635	0.012	0.012

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: This table reports the OLS estimates from regressing health behavior on the female dummy. Panel A reports results for self-reported health. Here, the dependent variable is an indicator for reporting their health to be atleast "Good" or better. Panel B reports results for healthcare utilization, where the dependent variable is a standardized index constructed out of the variables regarding this. All specifications include state dummies. Standard errors are clustered at the household level.

Table 4: Health behaviors and frailty

	Panel A: Self-reported health		Panel B: Healthcare utilization	
	(1)	(2)	(1)	(2)
Frailty (Std)	−0.190***		0.007***	
	(0.002)		(0.000)	
Augmented frailty (Std)		−0.183***		0.006***
		(0.002)		(0.000)
R-squared	0.175	0.172	0.099	0.076
Observations	71,874	71,874	70,507	70,507
$\overline{Y}$	0.635	0.635	0.012	0.012

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: This table presents OLS estimates from regressing health behaviors on frailty index. Panel A presents estimates for self-reported health; Panel B presents estimates for healthcare utilization. We report coefficients and standard errors from ordinary least squares regressions of the frailty indices on our health outcome measures. The dependent variable in Panel A is an indicator of good health. The dependent variable in Panel B is a standardized index constructed out of healthcare utilization. All specifications include individual demographic controls and state of residence dummies. Standard errors are clustered at the household level

Table 5: Health behaviors and frailty by gender

	Panel A: Self-reported health		Panel B: Healthcare utilization	
	(1)	(2)	(1)	(2)
Female	−0.003	0.001	−0.005	−0.005
	(0.065)	(0.067)	(0.003)	(0.003)
Frailty (Std)	−0.203***		−0.008***	
	(0.003)		(0.000)	
Frailty (Std) × Female	0.021***		−0.002***	
	(0.004)		(0.000)	
Augmented frailty (Std)		−0.189***		−0.007***
		(0.003)		(0.000)
Augmented frailty (Std) × Female		0.010**		−0.002***
		(0.003)		(0.000)
R-squared	0.176	0.172	0.101	0.077
Observations	71,874	71,874	70,507	70,507
$\overline{Y}$	0.635	0.635	0.012	0.012

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: This table reports the effect of frailty on health behaviors by gender. Panel A presents estimates for self-reported health, Panel B presents estimates for healthcare utilization. We report OLS estimates of regressions of standardized frailty indices and their interactions with a female indicator on our health outcome measures. The dependent variable in Panel A is an indicator of good health. The dependent variable in Panel B is an index out of healthcare utilization. All spedifications control for individual demography, and state of residence. Standard errors are clustered at the household level

Table 6: Health behaviors and frailty by reform status and gender

	Self-reported health		Healthcare utilization	
	Frailty (Std)	Aug. Frailty (Std)	Frailty (Std)	Aug. Frailty (Std)
Panel A: Overall sample				
Reform status	-0.038^{***}	-0.045^{***}	0.001^{***}	0.002^{***}
	(0.007)	(0.007)	(0.000)	(0.000)
Female × Reform × Frailty	-0.016^{*}	-0.012	-0.000	-0.000
	(0.008)	(0.007)	(0.001)	(0.001)
R-squared	0.176	0.173	0.102	0.079
Observations	71,874	71,874	70,507	70,507
$\overline{Y}$	0.635	0.635	0.012	0.012
Panel B: Men				
Reform status	-0.038^{***}	-0.045^{***}	0.001^{***}	0.002^{***}
	(0.007)	(0.007)	(0.000)	(0.000)
Reform status × Frailty	0.014^{*}	0.016^{*}	0.001	0.001^{*}
	(0.007)	(0.006)	(0.001)	(0.000)
R-squared	0.179	0.170	0.113	0.087
Observations	30,468	30,468	29,973	29,973
$\overline{Y}$	0.655	0.655	0.012	0.012
Panel C: Women				
Reform status	-0.007	-0.018^{**}	0.001^{***}	0.001^{***}
	(0.006)	(0.006)	(0.000)	(0.000)
Reform status × Frailty	-0.004	0.003	0.001	0.001^{**}
	(0.005)	(0.005)	(0.000)	(0.000)
R-squared	0.175	0.175	0.095	0.074
Observations	41,402	41,402	40,526	40,526
$\overline{Y}$	0.621	0.621	0.012	0.012

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: This table reports the effect of frailty on health behaviors by reform status and gender. Columns 1-4 present estimates for self-reported health; Columns 5-8 present estimates for healthcare utilization. Panel A shows overall sample results; Panel B shows results for men; Panel C shows results for women. We report coefficients and standard errors from ordinary least squares regressions of standardized frailty indices and their interactions with reform status. The dependent variable in Columns 1-4 is an indicator of good health (zero if good, one if bad). The dependent variable in Columns 5-8 is healthcare utilization. The frailty and augmented frailty indices range from 0 to 1.

Table 7: Health behaviors and frailty by deprivation intensity

	Self-reported health		Healthcare utilization	
	Frailty (Std)	Aug. Frailty (Std)	Frailty (Std)	Aug. Frailty (Std)
Panel A: Men				
Deprivation intensity	0.004***	0.005***	−0.00008***	−0.00012***
	(0.000)	(0.000)	(0.00002)	(0.00002)
Frailty	−0.264***	−0.197***	0.01470***	0.01146***
	(0.012)	(0.010)	(0.00089)	(0.00078)
Deprivation intensity ×	0.001***	0.000	−0.00014***	−0.00010***
Frailty	(0.000)	(0.000)	(0.00002)	(0.00002)
R-squared	0.183	0.174	0.118	0.090
Observations	30,468	30,468	29,973	29,973
$\overline{Y}$	0.655	0.655	0.012	0.012
Panel B: Women				
Deprivation intensity	0.003***	0.003***	−0.00004**	−0.00007***
	(0.000)	(0.000)	(0.00001)	(0.00001)
Frailty	0.002***	0.001***	0.00978***	0.00743***
	(0.000)	(0.000)	(0.00046)	(0.00036)
Deprivation intensity ×	0.002***	0.001***	−0.00009***	−0.00006***
Frailty	(0.000)	(0.000)	(0.00001)	(0.00001)
R-squared	0.179	0.178	0.098	0.076
Observations	41,402	41,402	40,526	40,526
$\overline{Y}$	0.621	0.621	0.012	0.012

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: This table reports the effect of frailty on health behaviors by deprivation intensity exposure, stratified by gender. Panel A presents results for men; Panel B presents results for women. Columns 1-4 present estimates for self-reported health; Columns 5-8 present estimates for healthcare utilization. We report coefficients and standard errors from ordinary least squares regressions of standardized frailty indices and their interactions with exposure intensity. The dependent variable in Columns 1-4 is an indicator of good health (zero if good, one if bad). The dependent variable in Columns 5-8 is healthcare utilization.

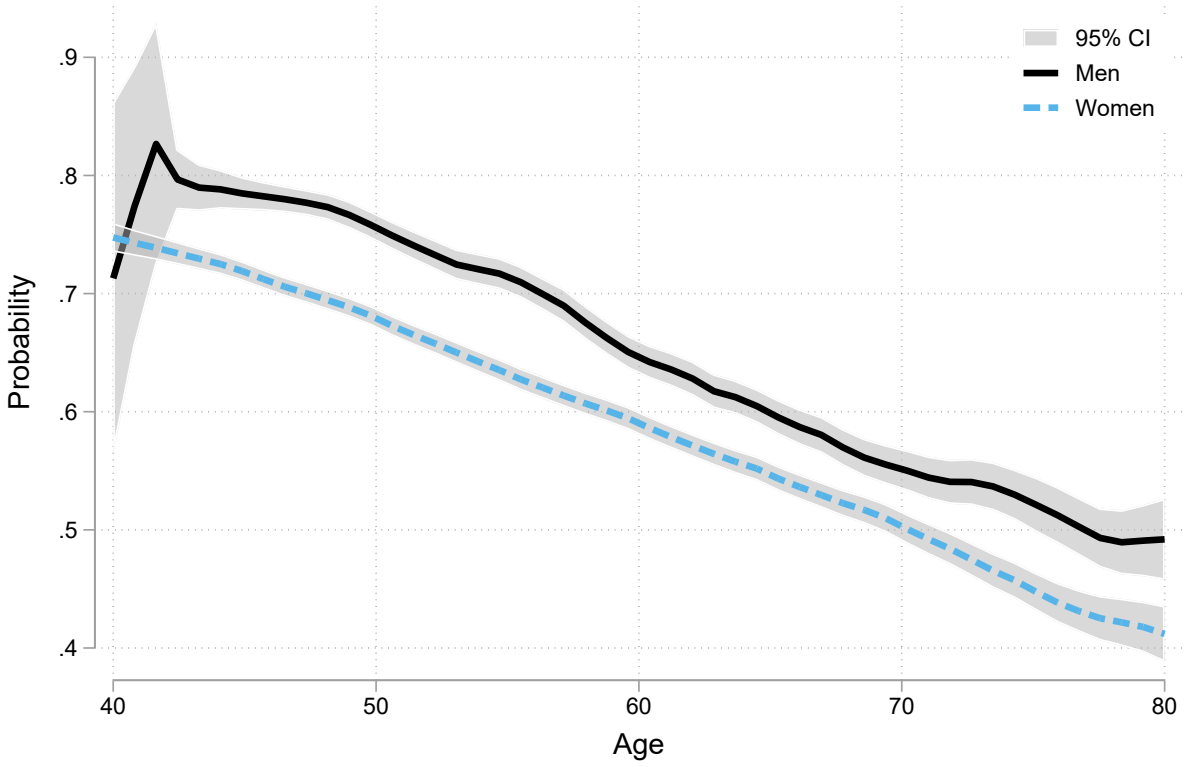


Figure 1: Probability of good self-reported health across age by gender

Notes: This figure shows the distribution of probability of reporting good self-reported health across age by gender. Confidence intervals are depicted by the shaded region. An indicator of good health which takes on a value of zero if self-reported health is good and takes on a value of one if self-reported health is bad is constructed using a self-reported health variable which takes values 1 to 5, where higher numbers indicate worsening self-reported health. The good health indicator switches on when an individual reports health greater than or equal to 3. Data on the self-reported health variable is collected from Longitudinal Aging Survey of India (LASI), wave one, administered by IIPS.

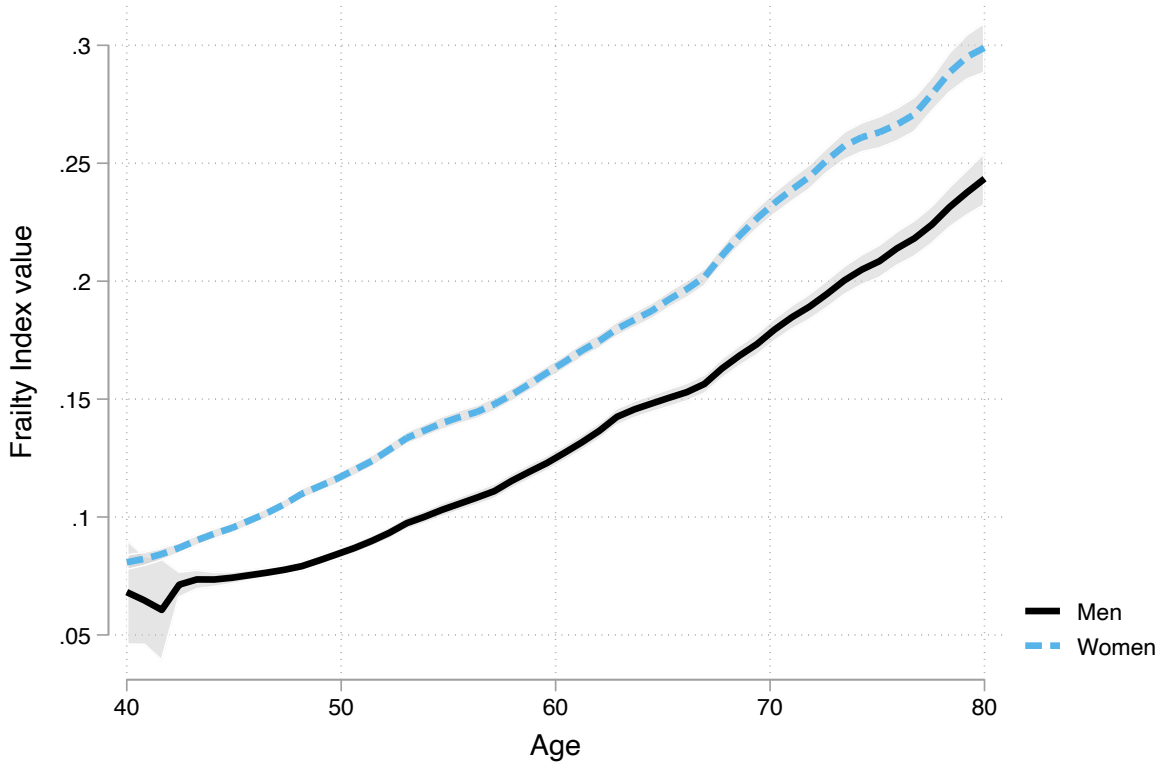


Figure 2: Frailty Index score across age by gender

Notes: This figure shows the distribution of the scores of the frailty index across age split by gender. Confidence intervals are depicted by the shaded region. The index is calculated as a weighted average of a series of deficit categories. The deficit variables are collected from Longitudinal Aging Survey of India (LASI), wave one, administered by IIPS.

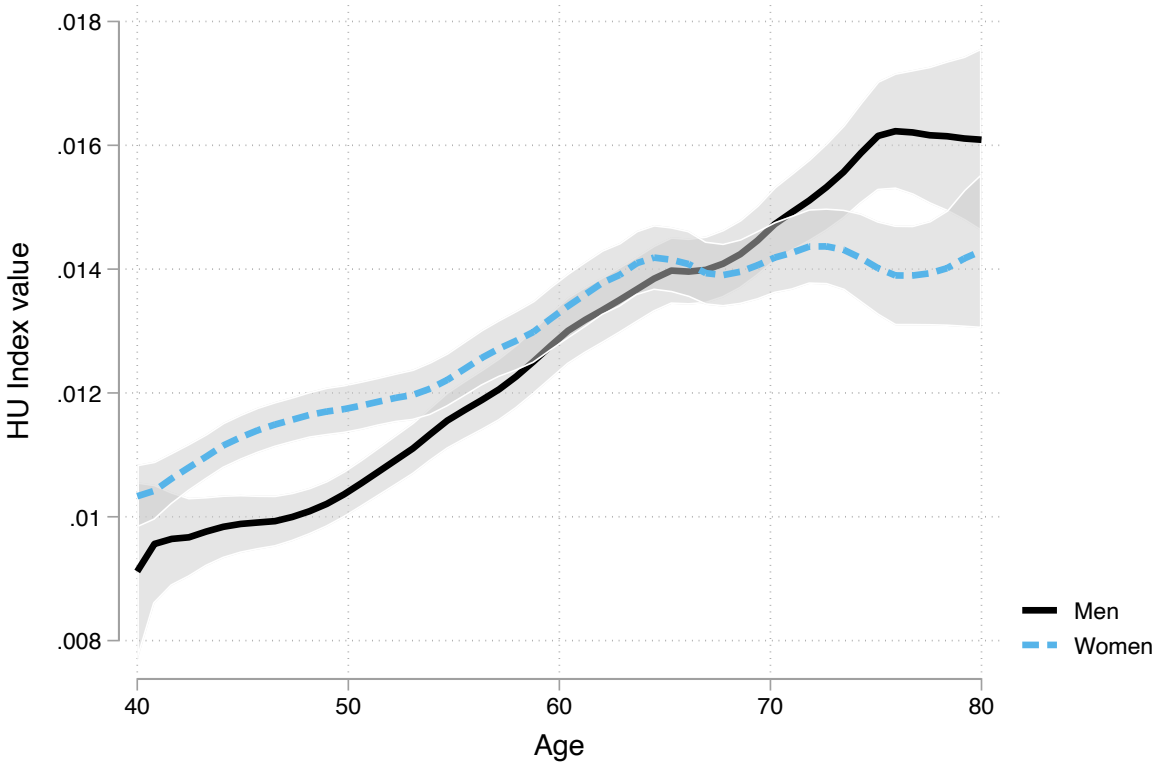


Figure 3: Healthcare Utilization Index score across age by gender

Notes: This figure shows the distribution of the scores of the healthcare utilization index across age split by gender. Confidence intervals are depicted by the shaded region. The index is calculated as a weighted average of a series of healthcare utilization categories and then normalized. The healthcare utilization variables are collected from Longitudinal Aging Survey of India (LASI), wave one, administered by IIPS.

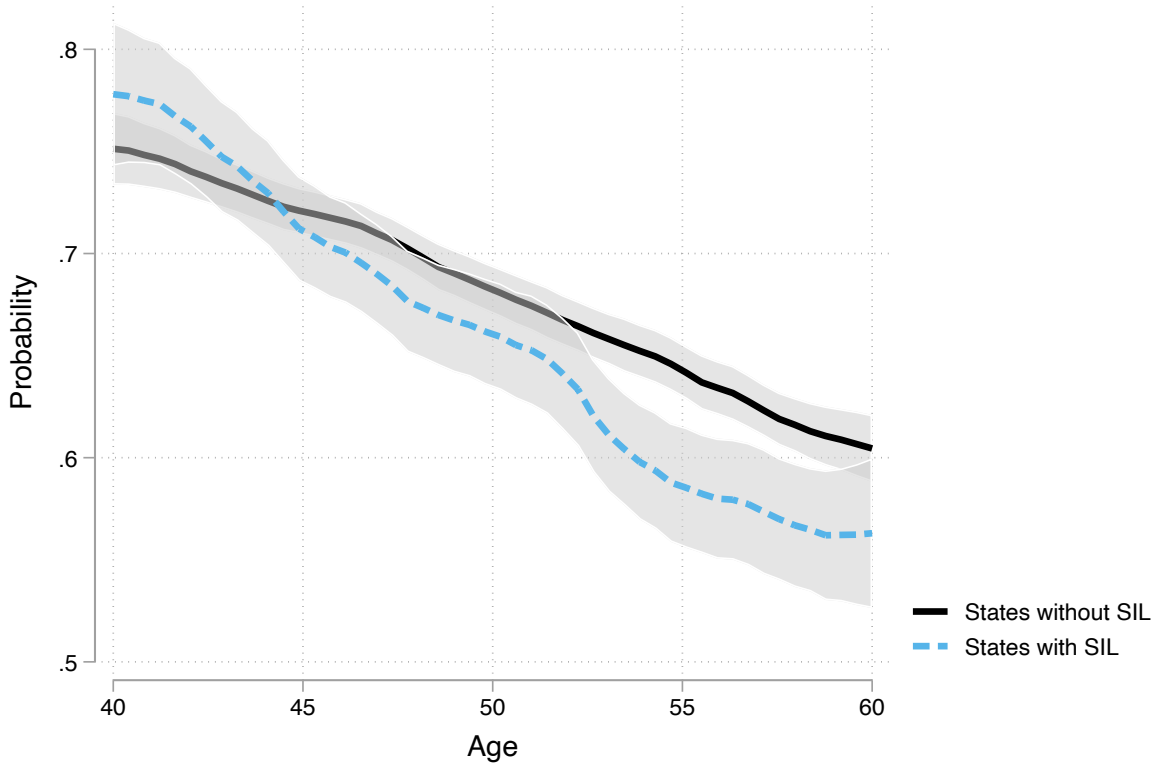


Figure 4: Self-reported health for women - by reform status

Notes: This figure shows the probability of reporting good health for women across age split by states which enacted inheritance laws vs those which did not prior to 2005. The shaded area represents the 95% confidence interval. An indicator of good health which takes on a value of zero if self-reported health is good and takes on a value of one if self-reported health is bad is constructed using a self-reported health variable which takes values 1 to 5, where higher numbers indicate worsening self-reported health. The good health indicator switches on when an individual reports health greater than or equal to 3. The data on self reported health are collected from Longitudinal Aging Survey of India (LASI), wave one, administered by IIPS.

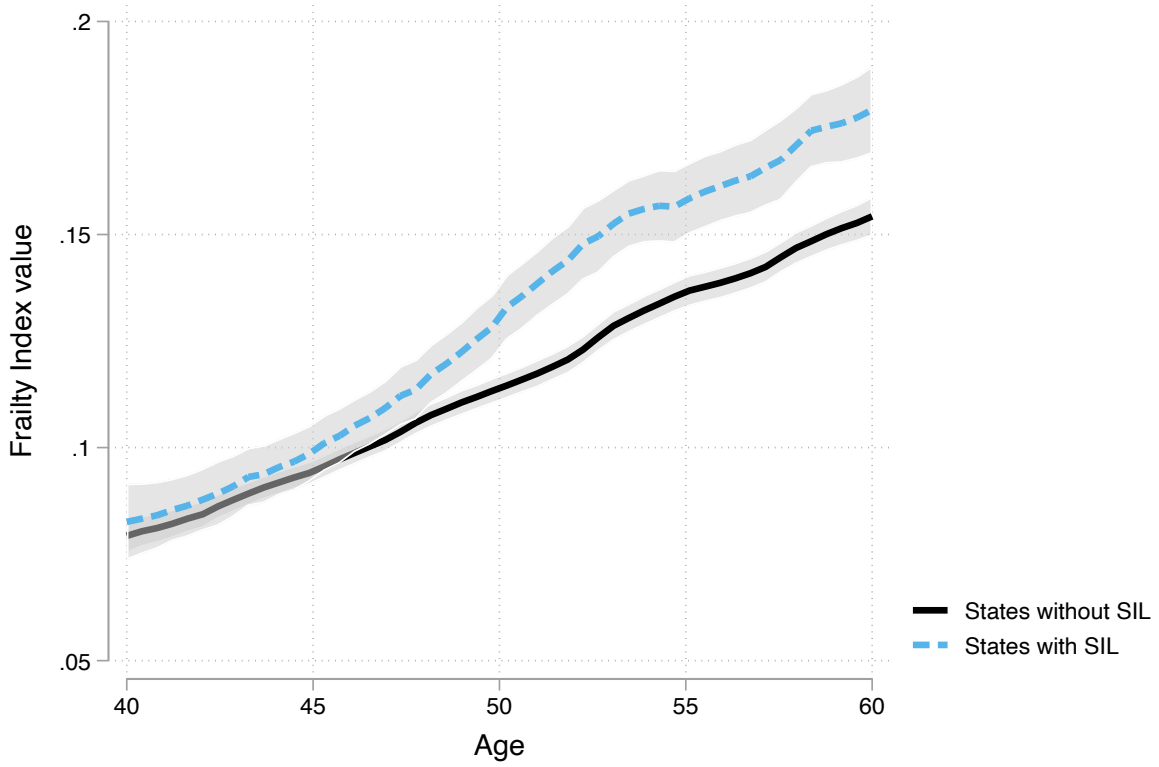


Figure 5: Frailty Index for women - by reform status

Notes: This figure plots the frailty index scores for women across age separated by states which enacted inheritance laws vs those which did not prior to 2005. Confidence intervals are depicted by the shaded region. The index is calculated as a weighted average of a series of deficit categories. The data on deficit variables are collected from Longitudinal Aging Survey of India (LASI), wave one, administered by IIPS.

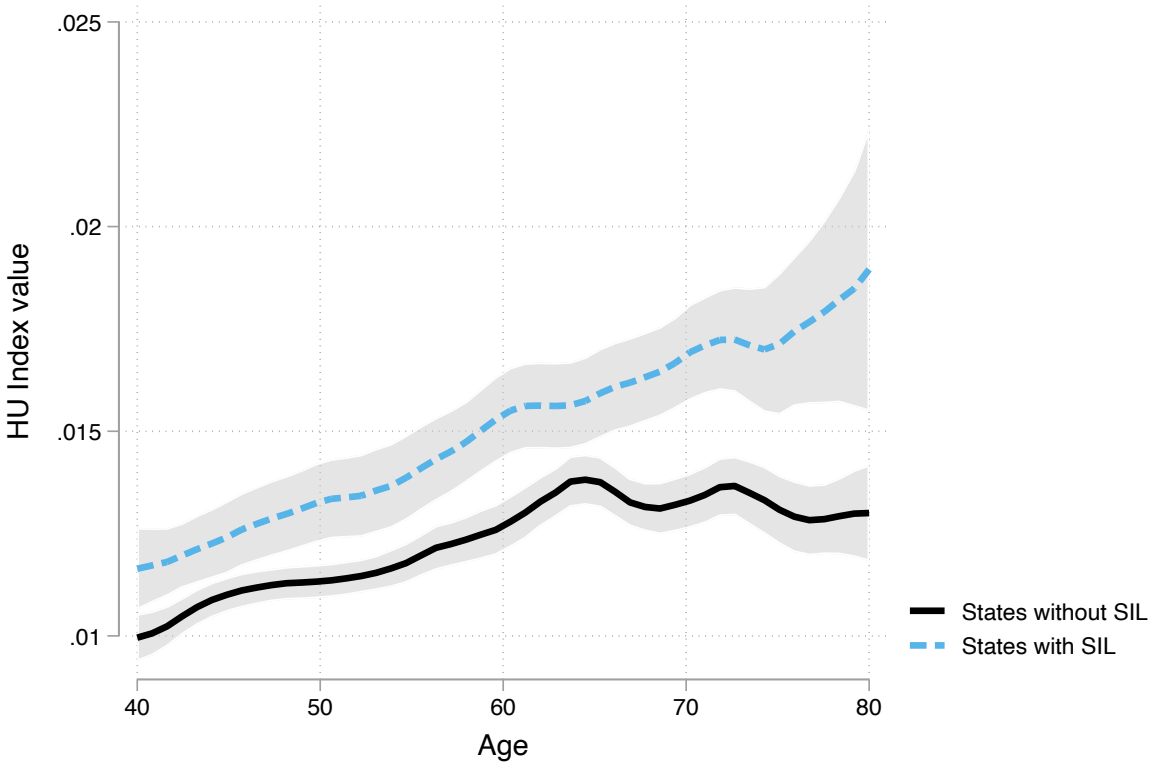


Figure 6: Healthcare Utilization Index for women - by reform status

Notes: This figure plots the healthcare utilization index scores for women across age separated by states which enacted inheritance laws vs those which did not prior to 2005. Confidence intervals are depicted by the shaded region. The index is calculated as a weighted average of a series of healthcare utilization categories. The data on healthcare utilization variables are collected from Longitudinal Aging Survey of India (LASI), wave one, administered by IIPS.

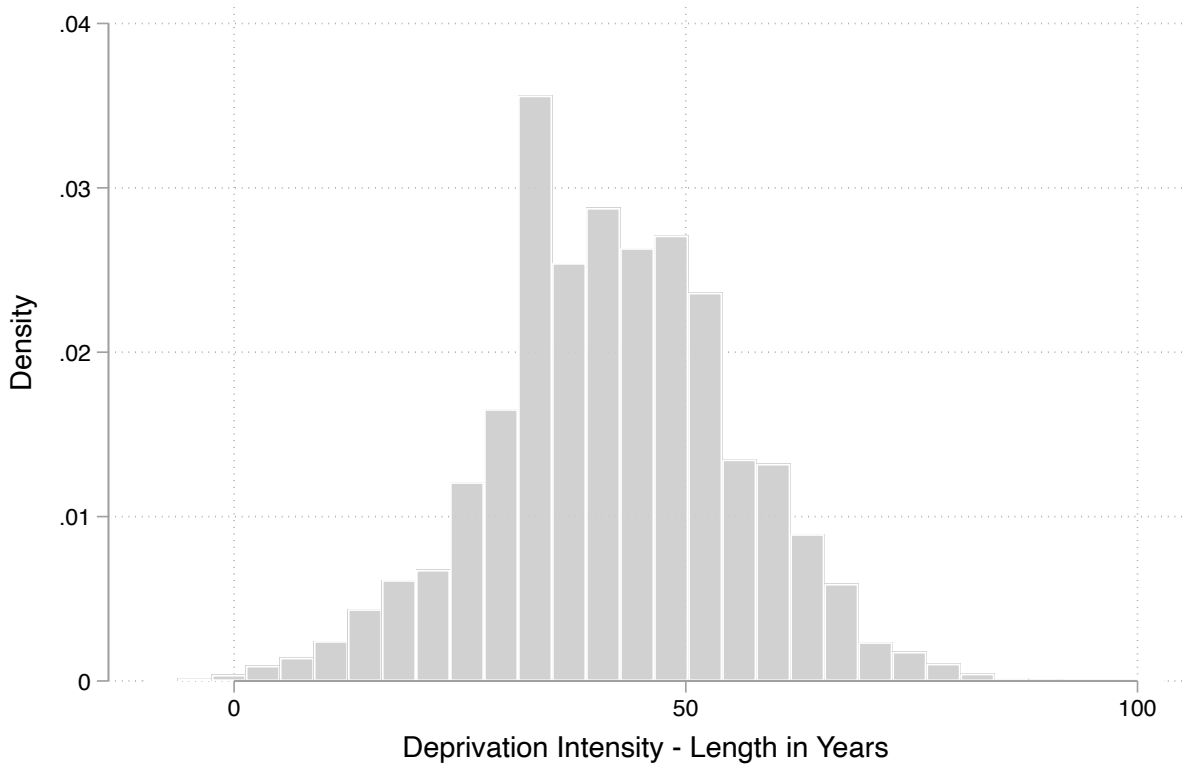


Figure 7: Distribution of Deprivation intensity

Notes: This figure shows the distribution of deprivation intensity for women. The variable is calculated as the number of years a woman has spent before the enactment of SIL amendment. This is done by taking a difference between birth year and year of enactment. The data on birth year are collected from Longitudinal Aging Survey of India (LASI), wave one, administered by IIPS.

A Appendix: Detailed Theoretical Framework

A.1 Setup

Consider the health demand of an individual i in adulthood. The individual chooses health demand $h \in [0, 1]$, where $h = 0$ represents fully prioritizing others' health over their own (no demand for own health), and $h = 1$ represents fully prioritizing their own health (maximum possible demand for own well-being). Investing in one's health may not be one's own decision, especially for women. It may be decided jointly by the family, or unilaterally by the household head, and is typically subject to a resource constraint at the household level. But demand for health—one's perceived need for leading a healthy life—is one's own decision. Once an individual determines their level of h_i, they invest in their health according to this demand. We characterize the benefit from this investment as $B(h_i)$ and assume it translates one-to-one into health returns. The construct of the model thus allows health demand to depend on priority for one's own well-being, which in turn determines investment in one's own health, which directly translates into health benefits.

A.2 Utility Function

Following Akerlof and Kranton (2000), utility is:

$$U_i = B(h_i) - I_s(h_i; E_i) - I_o(h_i; E_i) \tag{10}$$

where $B(h_i)$ is the direct benefit from health investment (health returns), $I_s(h_i; E_i)$ is the identity loss from one's own actions violating internalized prescriptions, $I_o(h_i; E_i)$ is the identity loss from others' disapproval, and E_i, which we call *deprivation intensity.* E_i measures cumulative exposure to gender-unequal norms (years spent in the pre-reform normative environment). The main paper presents the model using a general benefit function $B(h_i)$ with $B' > 0$ and $B'' < 0$. Here we specify parametric forms that gives us closed form

solutions and sharper comparative statics.

A.3 Assumptions

A.3.1 Benefit Function

We assume:

$$B(h_i) = \beta h_i - \frac{\gamma}{2} h_i^2 \quad , \quad \beta > 0 \quad , \quad \gamma > 0 \tag{11}$$

This reduced-form benefit function captures diminishing marginal returns to health investment. While the full Grossman (1972) model involves health capital accumulation and depreciation, this formulation serves as a tractable approximation that preserves the core feature of concavity in health returns and partially captures the tradeoff between health investment and home goods.

A.3.2 Identity Costs

The variable E_i measures how long a woman was exposed to gender-unequal norms. Specifically, it measures years spent in the pre-reform normative environment, weighted by developmental sensitivity. Higher E_i means greater deprivation intensity. The key innovation is that E_i increases identity costs for women. For men, we discuss the specification below in Section A.3.4.

Self-identity cost:

$$I_s(h; E_i) = \alpha_s(E_i) \cdot h_i \tag{12}$$

where $\alpha_s(E_i)$ is *increasing* in deprivation intensity. A woman with greater exposure to gender-unequal norms experiences greater internal conflict when prioritizing her own health. The linear form implies that identity cost is proportional to the size of the deviation from the traditional prescription $h_i = 0$.

Social sanction cost:

$$I_o(h; E_i) = \alpha_o(E_i) \cdot h_i \tag{13}$$

where $\alpha_o(E_i)$ is *increasing* in deprivation intensity. This captures that women raised in environments with worse gender norms: (a) internalize stronger traditional prescriptions about self-sacrifice, and (b) face or anticipate stronger social sanctions for deviating from those prescriptions.

Functional form. We assume:

$$\alpha_s(E) = \bar{\alpha}_s \cdot e^{\lambda_s E} \tag{14}$$

$$\alpha_o(E) = \bar{\alpha}_o \cdot e^{\lambda_o E} \tag{15}$$

where $\bar{\alpha}_s, \bar{\alpha}_o > 0$ are baseline identity costs (at zero deprivation intensity, i.e., $E = 0$) and $\lambda_s, \lambda_o > 0$ govern how rapidly identity costs increase with exposure to unequal norms.

The exponential form ensures three properties. First, identity costs remain strictly positive for any level of exposure, including $E = 0$. Second, identity costs are increasing and convex in E, so each additional year of exposure raises identity costs by more than the previous year in absolute terms. Third, the *proportional* increase per year of exposure is constant at rate λ.

The baseline parameters $\bar{\alpha}_s$ and $\bar{\alpha}_o$ deserve additional discussion. They reflect prescriptions embedded in the broader cultural environment like familial expectations, religious teachings, media representations, peer socialization that persist even when a woman has zero exposure to the pre-reform environment. A woman born after reform ($E_i = 0$) still faces identity costs from these non-legal sources. The model thus predicts that reform *narrows* the gender gap in health demand but does not fully close it. This connects directly to the zero-deprivation baseline result discussed in the main paper: a persistent gender gap at $E_i = 0$ is a signature of identity costs from sources beyond the reach of legal reform.

A.3.3 Exposure Technology

Let deprivation intensity be:

$$E_i = \int_0^{a_{ct}} \delta(a) \cdot D_i(a)\, da \tag{16}$$

where $D_i(a) = 1$ if woman i lived in the pre-reform normative environment at age a and $D_i(a) = 0$ otherwise, $\delta(a) \geq 0$ is the sensitivity of identity formation at age a, and a_{ct} is the current age of the woman.

This formulation allows different ages to matter differently for identity formation. Total exposure is a weighted sum of years spent in the pre-reform environment across the entire life course. The integral runs from birth to current age a_{ct}, allowing both childhood and adult pre-reform experience to contribute. The weighting function $\delta(a)$ governs the relative importance of different life stages: if $\delta(a)$ is concentrated at early ages, then childhood exposure dominates even though E_i accumulates over the full life course.

The empirical treatment variable in our analysis corresponds directly to E_i: years spent away from the gender-equal (post-reform) environment. Within a given cohort, women in early-reform states have lower E_i than women in late-reform states, because reform arrived earlier in their lives.

The general formulation nests several special cases. If $\delta(a) = 1$ for all a, total years in the pre-reform environment is a sufficient statistic. If $\delta(a)$ is higher for early ages, a critical period during childhood obtains. If $\delta(a)$ is higher for adolescence, a critical period during teenage years obtains. If $\delta(a) \approx 0$ for $a > 18$, only formative-years exposure matters for identity formation, and adult years in the pre-reform environment add negligible weight.

A.3.4 Male Identity Costs

For men, their social identity may carry its own prescriptions. Norms around being the provider, risk-taker, or expressing stoicism could generate identity costs that eventually affect health behavior too. However, our focus is on the differential effect of deprivation intensity

operating through inheritance law. This directly targets the gendered asymmetry in property rights and the associated prescriptions for women's self-sacrifice.

We assume that, for men, the identity cost functions related to *this particular set of prescriptions* - prioritizing family over self in health - are negligible: $\alpha_s^m \approx 0$ and $\alpha_o^m \approx 0$. This does not require that men face no identity costs whatsoever, only that the specific prescription "prioritize others' health over your own" does not apply to men in the Indian context. Inheritance reform, by targeting women's property rights, shifts prescriptions relevant to women's identity but does not similarly alter the prescriptions governing men's health demand.

Under this assumption, men's optimal health demand is:

$$h_m^* = \frac{\beta}{\gamma} \tag{17}$$

which serves as a benchmark. Since $\alpha_s(E_i) + \alpha_o(E_i) > 0$ for all $E_i \geq 0$, we have $h_f^*(E_i) < h_m^*$ for all women, regardless of their deprivation intensity. In the empirical analysis, men serve as a comparison group.

A.4 Optimization and Comparative Statics

Woman i maximizes:

$$U_i = \beta h_i - \frac{\gamma}{2} h_i^2 - [\alpha_s(E_i) + \alpha_o(E_i)] \cdot h_i \tag{18}$$

The first-order condition is:

$$\beta - \gamma h_i^* - \alpha_s(E_i) - \alpha_o(E_i) = 0 \tag{19}$$

Solving for the optimal choice:

$$h_i^*(E_i) = \frac{\beta - \alpha_s(E_i) - \alpha_o(E_i)}{\gamma} \tag{20}$$

assuming an interior solution $h_i^* \in (0, 1)$.

Effect of deprivation intensity on health demand. Differentiating with respect to E:

$$\frac{\partial h^*}{\partial E} = \frac{-\alpha_s'(E) - \alpha_o'(E)}{\gamma} \tag{21}$$

Substituting the exponential forms, $\alpha_s'(E) = \lambda_s \bar{\alpha}_s e^{\lambda_s E} > 0$ and $\alpha_o'(E) = \lambda_o \bar{\alpha}_o e^{\lambda_o E} > 0$, yields:

$$\frac{\partial h^*}{\partial E} = \frac{-\lambda_s \bar{\alpha}_s e^{\lambda_s E} - \lambda_o \bar{\alpha}_o e^{\lambda_o E}}{\gamma} < 0 \tag{22}$$

Greater deprivation intensity leads to lower health demand. Each additional year of exposure increases the identity cost of prioritizing one's own health, reducing optimal demand.

Increasing marginal harm. The second derivative is:

$$\frac{\partial^2 h^*}{\partial E^2} = \frac{-\lambda_s^2 \bar{\alpha}_s e^{\lambda_s E} - \lambda_o^2 \bar{\alpha}_o e^{\lambda_o E}}{\gamma} < 0 \tag{23}$$

Health demand is decreasing at an increasing rate in deprivation intensity: each additional year of exposure reduces health demand by more than the previous year. This reflects the convexity of the exponential identity cost functions. What this means is that as women age spend more time in a pre-reform environment, additional years of exposure compound the harm: norms become more deeply entrenched through repeated behavioral reinforcement, social networks and reference groups solidify around traditional expectations. The cost of deviating from long-practiced traditions of self-sacrifice grow. Equivalently, reducing exposure through earlier reform yields the largest health gains for the most-exposed women.

When effects are larger. The absolute marginal effect of deprivation intensity $\left|\frac{\partial h^*}{\partial E}\right|$ is larger when baseline identity costs ($\bar{\alpha}_s$, $\bar{\alpha}_o$) are higher, since women from more traditional backgrounds carry stronger identity costs at every level of exposure; when sensitivity parameters (λ_s, λ_o) are higher, since norms respond more strongly to cumulative exposure; and when current exposure (E) is itself higher, since the convex cost structure means the

marginal year of exposure is more damaging at higher exposure levels.

A.5 Numerical Example

To build intuition for the exposure technology, consider three women observed in 2018, all residing in a state that reformed inheritance law in 1985:

- **Woman A:** Born 1970, currently age 48. She lived in the pre-reform environment for ages 0–14 (15 years). With uniform weights ($\delta(a) = 1$ for all a), $E_A = 15$.
- **Woman B:** Born 1985, currently age 33. Reform occurs at her birth. She spends zero years in the pre-reform environment. $E_B = 0$.
- **Woman C:** Born 1950, currently age 68. She lived in the pre-reform environment for ages 0–34 (35 years). With uniform weights, $E_C = 35$.

How the weighting function $\delta(a)$ shapes relative exposure depends on what assumptions one makes about the sensitivity of identity formation at different ages.

If early ages receive greater weight—say $\delta(a) = 2$ for $a \leq 5$ and $\delta(a) = 1$ for $a > 5$—then $E_A = 20$, $E_B = 0$, and $E_C = 40$. The gap between Women A and C is amplified because C has additional adult years of exposure that A does not.

But if identity formation occurs primarily during the formative years ($\delta(a) \approx 0$ for $a > 18$), then $E_A = 20$, $E_B = 0$, and $E_C = 23$, and the gap narrows substantially because C's additional adult exposure no longer counts. The framework thus connects to the developmental psychology and environmental health literatures, where formative-years exposure to conditions has lasting effects on later-life behavior and outcomes.

In practice, our empirical specification uses uniform weights ($\delta(a) = 1$), so that deprivation intensity is simply the number of pre-reform years lived. The general formulation clarifies what this empirical measure captures and what it would miss if identity formation is concentrated at particular developmental stages.

A.6 Discussion

A.6.1 From Legal Reform to Norm Change

The model takes as given that the pre-reform normative environment strengthens identity costs associated with women's self-sacrifice. But through what channels does the legal status of inheritance shape the prescriptions a woman internalizes? We identify three plausible transmission channels.

First, *observational learning*: children raised in the pre-reform environment observe women lacking property rights, excluded from economic decisions, and occupying a subordinate position within families. These observations shape beliefs about what is "normal" and "appropriate" for women, strengthening the prescription to prioritize others over self.

Second, *intrahousehold dynamics*: without equal inheritance rights, women have weaker fallback positions in household bargaining (Deininger et al., 2019). Children growing up in such households observe gender dynamics where mothers have less bargaining power, reinforcing the prescriptions they absorb about women's subordinate role.

Third, *signaling and legitimacy*: the legal codification of unequal inheritance signals societal acceptance of gender hierarchy. The absence of equal rights removes a potential reference point that could weaken traditional prescriptions, leaving the social sanction cost for women who prioritize their own health unchallenged by any legal counter-norm.

These channels are mutually reinforcing and difficult to disentangle empirically. The model does not require identifying which channel dominates—only that, in aggregate, years spent in the pre-reform environment increase the identity costs associated with prioritizing one's own health.

A.6.2 Separating Internal and External Identity Costs

We maintain both I_s and I_o because they capture distinct mechanisms. I_s represents internal conflict: even if no one observes her, a woman may feel uncomfortable prioritizing herself. I_o

represents external sanctions: others judge her, and she anticipates this judgment. Exposure to unequal norms strengthens both—a woman raised in a more unequal environment internalizes stronger guilt about self-prioritization (higher I_s) *and* anticipates stronger social disapproval (higher I_o).

While maintaining both terms is theoretically motivated, empirically distinguishing internal from external identity costs is extremely difficult with observational data. The model's empirical value lies not in separating the two channels but in showing that both predict the same qualitative result: greater deprivation intensity reduces adult health demand. The distinction becomes relevant for policy design—interventions targeting internal norms (e.g., education campaigns) versus external sanctions (e.g., community-level programs) would map onto different identity cost components.

A.6.3 The Linear Identity Cost Structure

The formulation $I_s = \alpha_s(E) \cdot h$ implies identity cost is proportional to deviation from the prescription. The prescription is "prioritize others over yourself," so $h = 0$ is the ideal. At $h = 0$ (no self-prioritization), there is no violation and no identity cost. At $h = 0.5$ (moderate self-prioritization), a moderate cost obtains. At $h = 1$ (full self-prioritization), identity cost is maximal. Thus h measures the size of the deviation, and α_s scales how much that deviation hurts. The scaling factor $\alpha_s(E)$ increases with deprivation intensity, so the same level of health demand h generates *more* disutility for a woman with more exposure. Alternative formulations (quadratic costs, threshold effects) would yield qualitatively similar predictions, with the additional feature of convex or non-monotone marginal identity costs in the size of deviation.

A.6.4 Health Demand versus Health Reporting

The model generates predictions about optimal health demand h^* - how much a woman prioritizes her own health. Empirically, we observe self-reported health and healthcare

utilization. The mapping from h^* to these outcomes involves distinct assumptions.

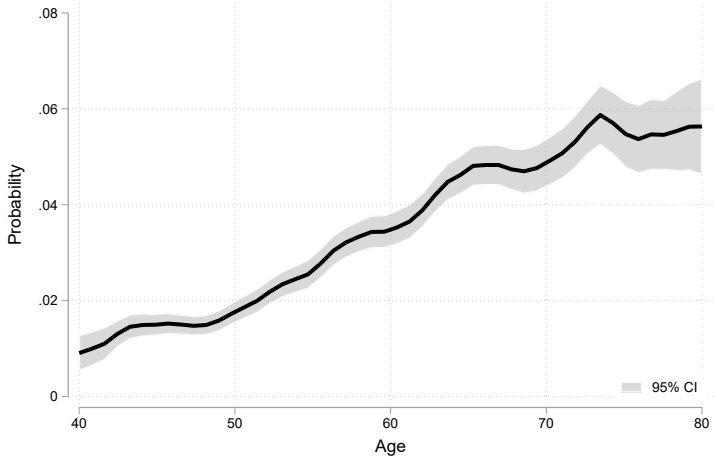
For healthcare utilization, the connection is relatively direct: higher h^* translates to more doctor visits, preventive care, and treatment-seeking, subject to supply-side constraints that are orthogonal to our treatment.

For self-reported health, the relationship is more nuanced. The model predicts that women with lower h^* invest less in their health, leading to genuinely worse health outcomes over time. Thus, lower self-reported health among women with greater deprivation intensity may reflect actual health differences arising from lower investment. The model does not require a separate "reporting bias" mechanism, though such a channel could reinforce the predicted pattern if identity costs also affect willingness to acknowledge health needs.

The main paper discusses why self-reported health is particularly diagnostic for the identity cost channel (it is costless to produce, so constraints cannot bind on this margin) and addresses the measurement error objection (stable reporting heterogeneity would not respond to deprivation intensity). Here we note an additional nuance: even if identity costs operate partly through reporting—suppressing a woman's willingness to *claim* good health, rather than or in addition to reducing her actual health through lower investment—the underlying mechanism remains preference distortion. Whether the effect runs through the health production function (lower demand $\rightarrow$ lower investment $\rightarrow$ worse health $\rightarrow$ lower SRH) or through the reporting function (identity costs $\rightarrow$ reluctance to acknowledge health needs $\rightarrow$ lower SRH), both channels originate in the same identity cost parameters α_s and α_o. We interpret our empirical estimates as capturing the combined effect, without requiring decomposition.

B Appendix: Descriptives on Health Outcomes

(a) Full sample



(b) By gender

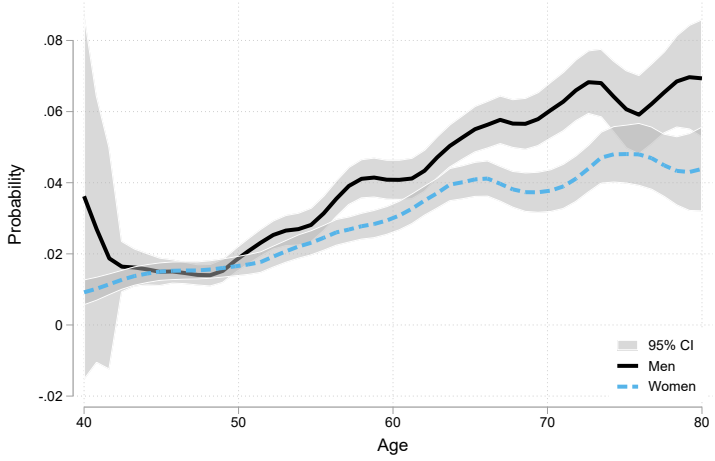
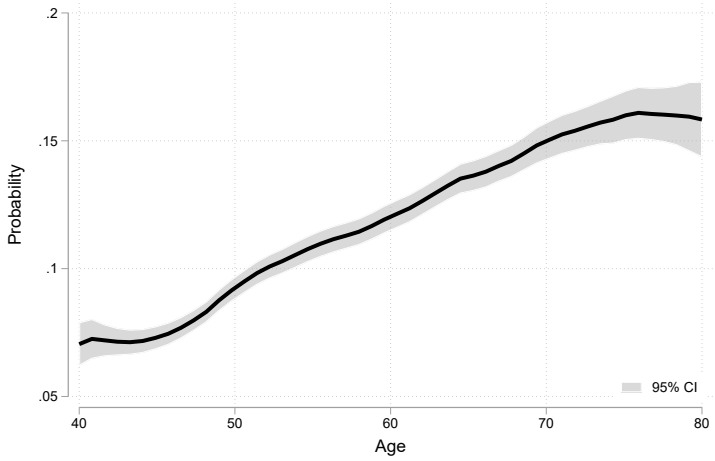


Figure B1: Average incidence of heart problems across age

Notes: This figure shows the distribution of average incidence of heart problems across age in the full sample and split by gender. Confidence intervals are depicted by the shaded region. The indicator for heart condition switches on when an individual reports having a heart problem at any point in the past. The variable is collected from Longitudenal Aging Survey of India (LASI), wave one, administered by IIPS.

(a) Full sample



(b) By gender

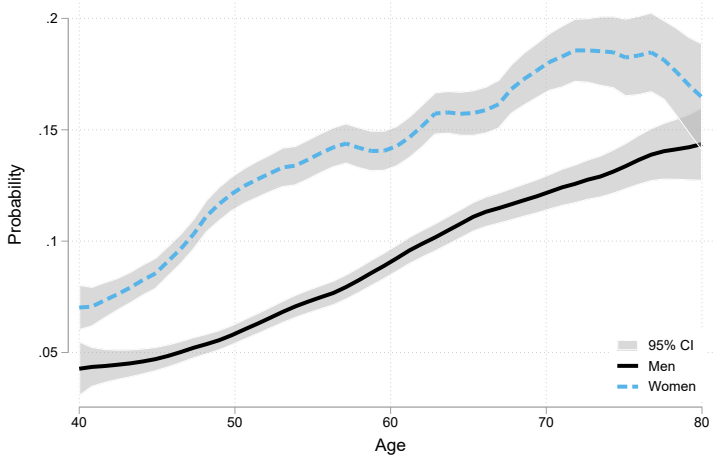
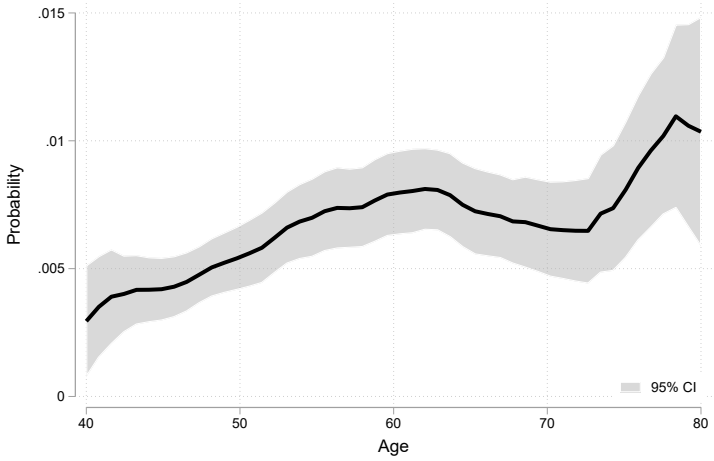


Figure B2: Average incidence of arthritis across age

Notes: This figure shows the distribution of average incidence of arthiritis across age in the full sample and split by gender. Confidence intervals are depicted by the shaded region. The indicator for arthritis switches on when an individual reports having arthritis at any point in the past. The variable is collected from Longitudenal Aging Survey of India (LASI), wave one, administered by IIPS.

(a) Full sample



(b) By gender

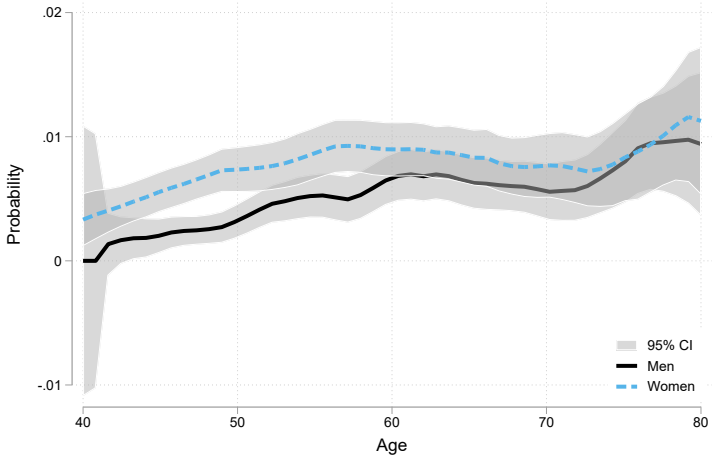
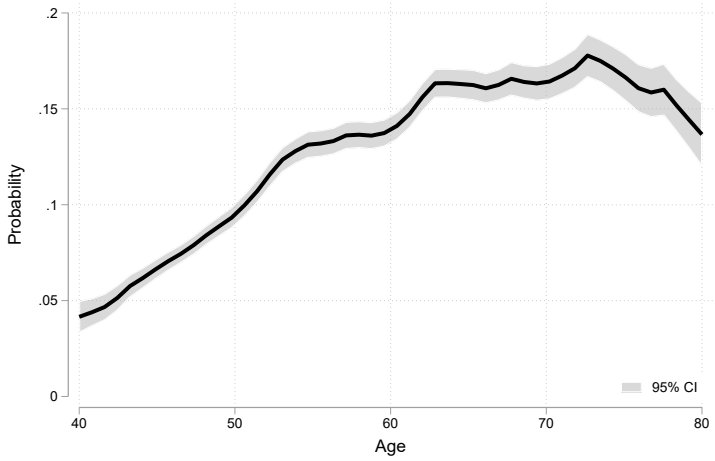


Figure B3: Average incidence of cancer across age

Notes: This figure shows the distribution of average incidence of cancer across age in the full sample and split by gender. Confidence intervals are depicted by the shaded region. The indicator for cancer switches on when an individual reports having cancer at any point in the past. The variable is collected from Longitudenal Aging Survey of India (LASI), wave one, administered by IIPS.

(a) Full sample



(b) By gender

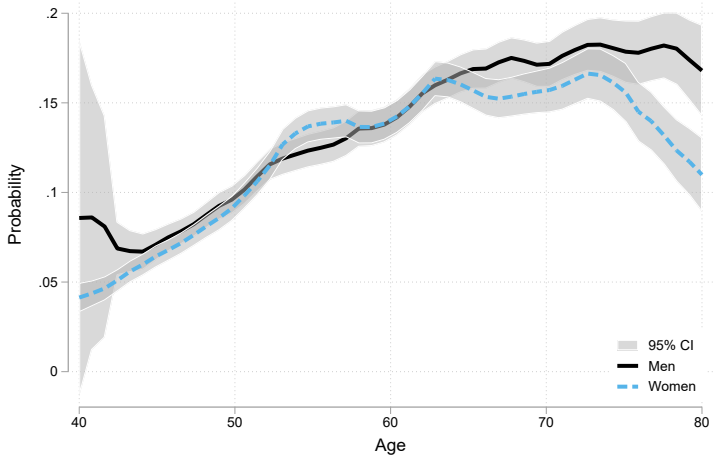
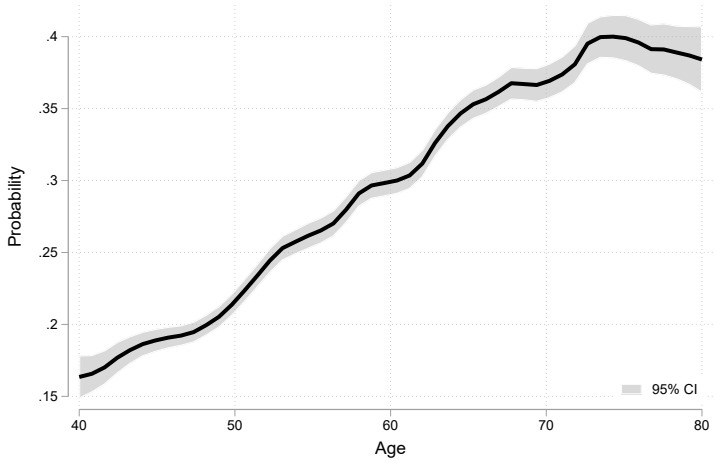


Figure B4: Average incidence of diabetes across age

Notes: This figure shows the distribution of average incidence of diabetes across age in the full sample and split by gender. Confidence intervals are depicted by the shaded region. The indicator for diabetes switches on when an individual reports having diabetes at any point in the past. The variable is collected from Longitudenal Aging Survey of India (LASI), wave one, administered by IIPS.

(a) Full sample



(b) By gender

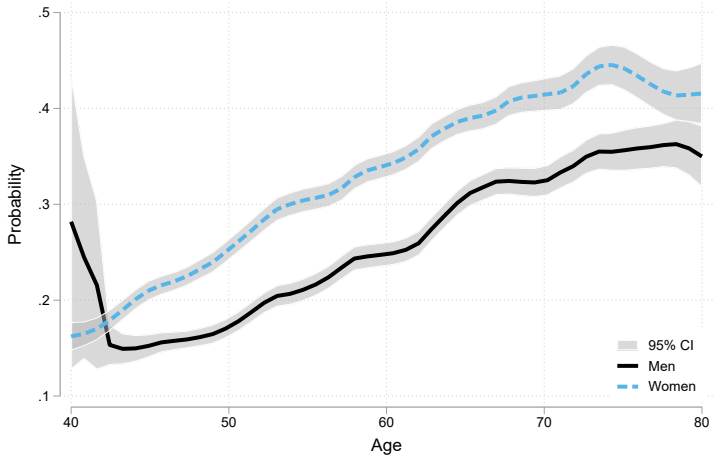
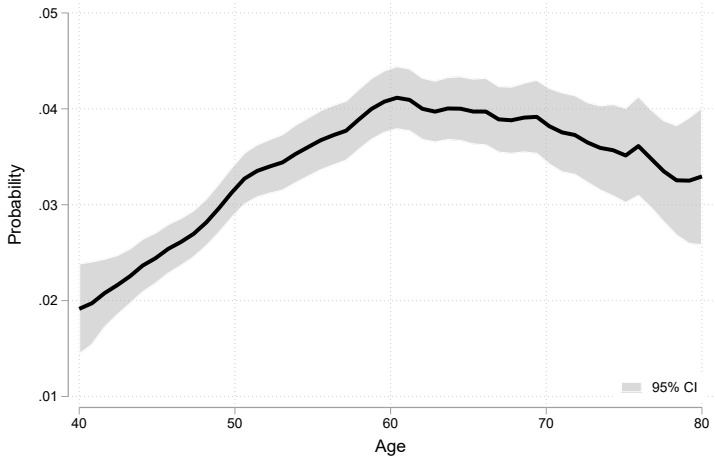


Figure B5: Average incidence of high blood pressure across age

Notes: This figure shows the distribution of average incidence of high blood pressure across age in the full sample and split by gender. Confidence intervals are depicted by the shaded region. The indicator for high blood pressure switches on when an individual reports having high blood pressure at any point in the past. The variable is collected from Longitudenal Aging Survey of India (LASI), wave one, administered by IIPS.

(a) Full sample



(b) By gender

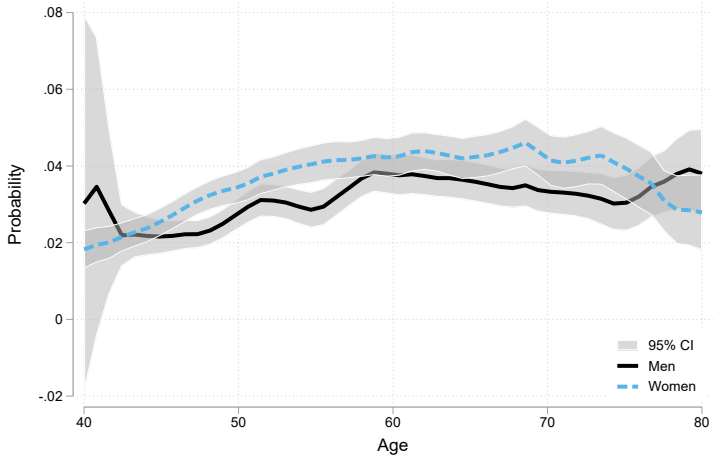
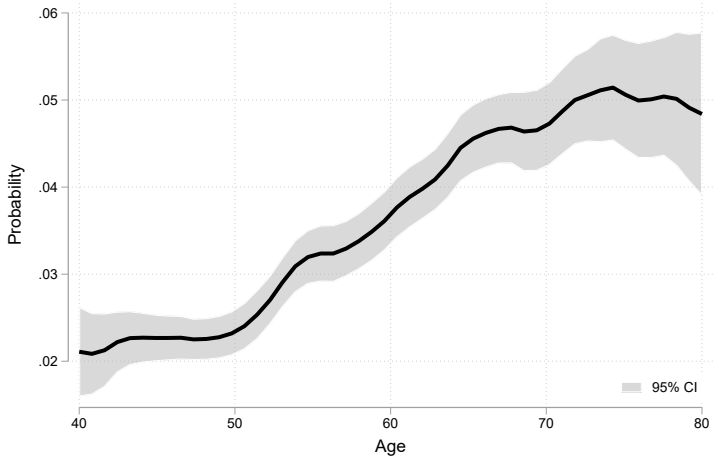


Figure B6: Average incidence of high cholesterol across age

Notes: This figure shows the distribution of average incidence of high cholesterol across age in the full sample and split by gender. Confidence intervals are depicted by the shaded region. The indicator for high cholesterol switches on when an individual reports having high cholesterol at any point in the past. The variable is collected from Longitudenal Aging Survey of India (LASI), wave one, administered by IIPS.

(a) Full sample



(b) By gender

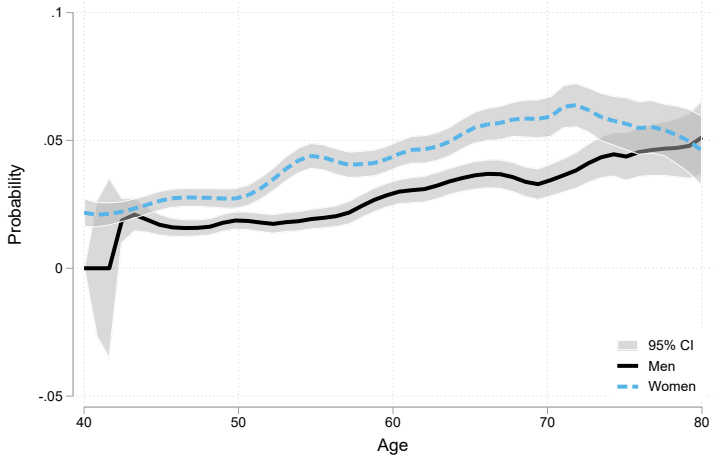
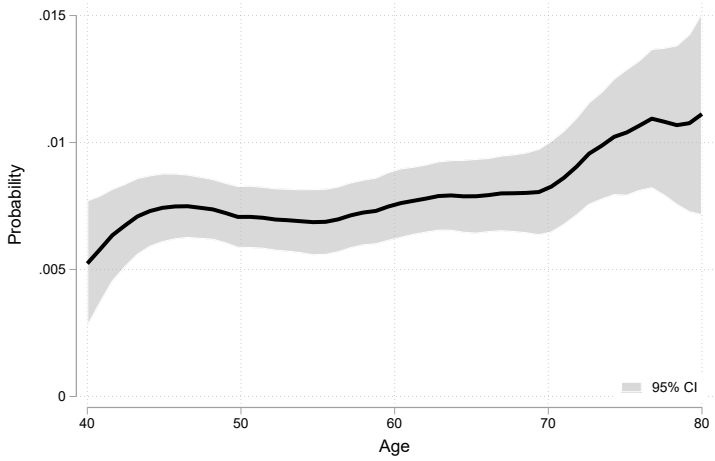


Figure B7: Average incidence of osteoporosis across age

Notes: This figure shows the distribution of average incidence of osteoporosis across age in the full sample and split by gender. Confidence intervals are depicted by the shaded region. The indicator for osteoporosis switches on when an individual reports having osteoporosis at any point in the past. The variable is collected from Longitudenal Aging Survey of India (LASI), wave one, administered by IIPS.

(a) Full sample



(b) By gender

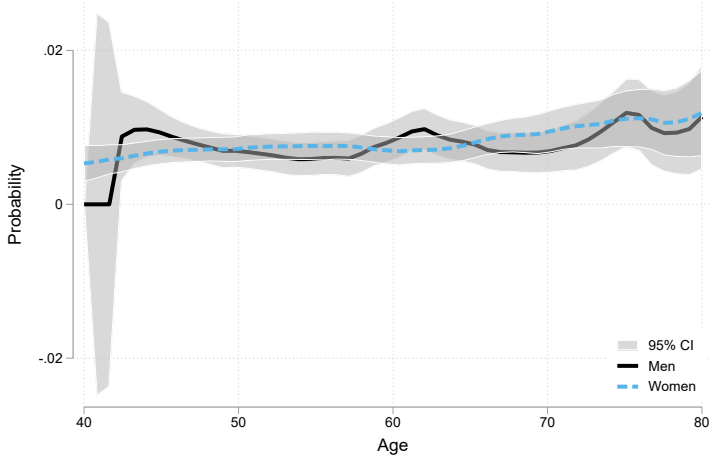
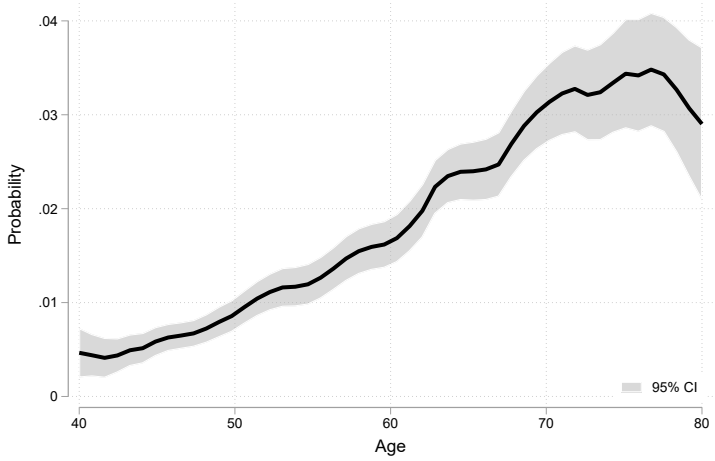


Figure B8: Average incidence of psychiatric condition across age

Notes: This figure shows the distribution of average incidence of osteoporosis across age in the full sample and split by gender. Confidence intervals are depicted by the shaded region. The indicator for osteoporosis switches on when an individual reports having osteoporosis at any point in the past. The variable is collected from Longitudenal Aging Survey of India (LASI), wave one, administered by IIPS.

(a) Full sample



(b) By gender

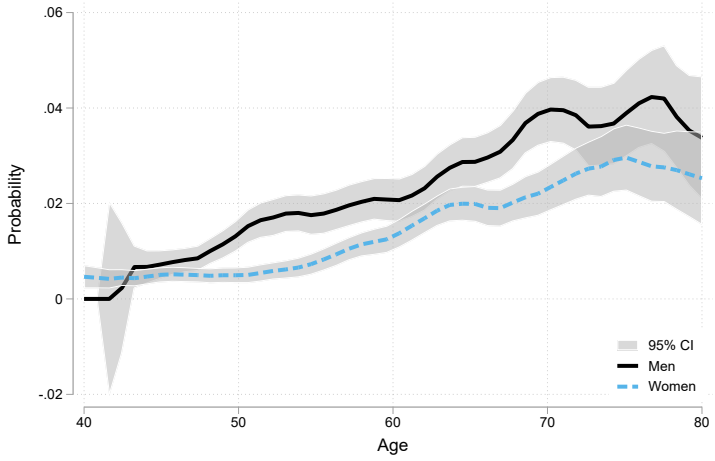
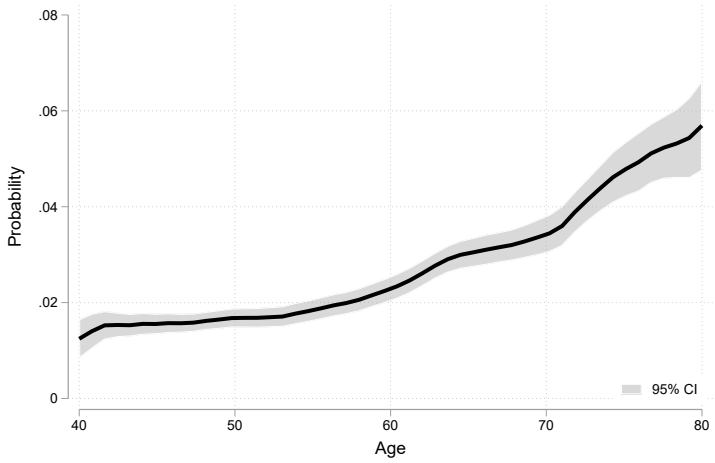


Figure B9: Average incidence of stroke across age

Notes: This figure shows the distribution of average incidence of stroke across age in the full sample and split by gender. Confidence intervals are depicted by the shaded region. The indicator for stroke switches on when an individual reports having stroke at any point in the past. The variable is collected from Longitudenal Aging Survey of India (LASI), wave one, administered by IIPS.

(a) Full sample



(b) By gender

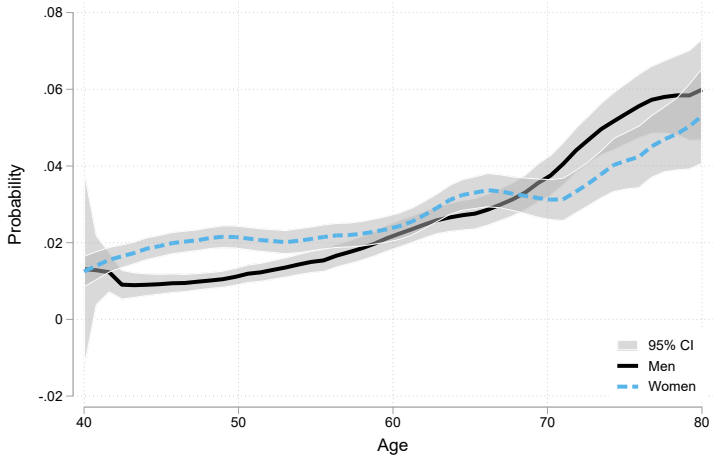


Figure B10: Average incidence of urinary problems across age

Notes: This figure shows the distribution of average incidence of urinary problems across age in the full sample and split by gender. Confidence intervals are depicted by the shaded region. The indicator for urinary problems switches on when an individual reports having urinary problems at any point in the past. The variable is collected from Longitudenal Aging Survey of India (LASI), wave one, administered by IIPS.

Table B1: Health outcomes on self-reported health

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Diabetes	−0.138***									
	(0.006)									
High BP		−0.133***								
		(0.004)								
Heart problems			−0.238***							
			(0.010)							
Cancer				−0.250***						
				(0.023)						
Stroke					−0.299***					
					(0.014)					
Arthritis						−0.160***				
						(0.006)				
Psych conditions							−0.270***			
							(0.021)			
High cholesterol								−0.203***		
								(0.010)		
Urinary problems									−0.245***	
									(0.011)	
Osteoporosis										−0.185***
										(0.010)
R-squared	0.073	0.079	0.072	0.067	0.071	0.076	0.067	0.071	0.071	0.070
Observations	71,844	71,847	71,690	71,852	71,853	71,797	71,829	71,852	71,838	71,797

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: This table reports the effect of various indicators of actual health conditions on self-reported health. We present the coefficients and standard errors for the ordinary least squares estimates of every health outcome on self-reported health. The dependent variable is an indicator of good health which takes on a value of zero if self-reported health is good and takes on a value of one if self-reported health is bad. Each actual health outcome reports whether the individual was ever diagnosed with that condition.

Table B2: Health outcomes on self-reported health by gender

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Female	−0.024	−0.010	−0.012	−0.014	−0.024	0.005	−0.008	−0.015	−0.014	−0.005
	(0.074)	(0.073)	(0.074)	(0.074)	(0.074)	(0.074)	(0.073)	(0.074)	(0.074)	(0.074)
Diabetes	−0.132***									
	(0.008)									
Diabetes ×	−0.011									
female	(0.011)									
High BP		−0.121***								
		(0.006)								
High BP ×		−0.019*								
female		(0.008)								
Heart problems			−0.237***							
			(0.014)							
Heart problems ×			−0.004							
female			(0.020)							
Cancer				−0.323***						
				(0.038)						
Cancer ×				0.111*						
female				(0.048)						
Stroke					−0.325***					
					(0.018)					
Stroke ×					0.062*					
female					(0.028)					
Arthritis						−0.161***				
						(0.010)				
Arthritis ×						0.003				
female						(0.012)				
Psych conditions							−0.290***			
							(0.032)			
Psych conditions ×							0.037			
female							(0.042)			
High cholesterol								−0.186***		
								(0.016)		
High cholesterol ×								−0.026		
female								(0.020)		
Urinary problems									−0.221***	
									(0.018)	
Urinary problems ×									−0.040	
female									(0.023)	
Osteoporosis										−0.184***
										(0.017)
Osteoporosis ×										0.000
female										(0.020)
R-squared	0.074	0.080	0.073	0.067	0.072	0.076	0.068	0.071	0.072	0.071
Observations	71,844	71,847	71,690	71,852	71,853	71,797	71,829	71,852	71,838	71,797

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: This table reports the effect of various indicators of actual health conditions on self-reported health by gender. We present the coefficients and standard errors for the ordinary least squares estimates of every health outcome on self-reported health and compare it with the coefficient term when each health outcome is interacted with gender. The dependent variable is an indicator of good health which takes on a value of zero if self-reported health is good and takes on a value of one if self-reported health is bad. Each actual health outcome reports whether the individual was ever diagnosed with that condition.

C Appendix: Descriptives on ADL and IADL

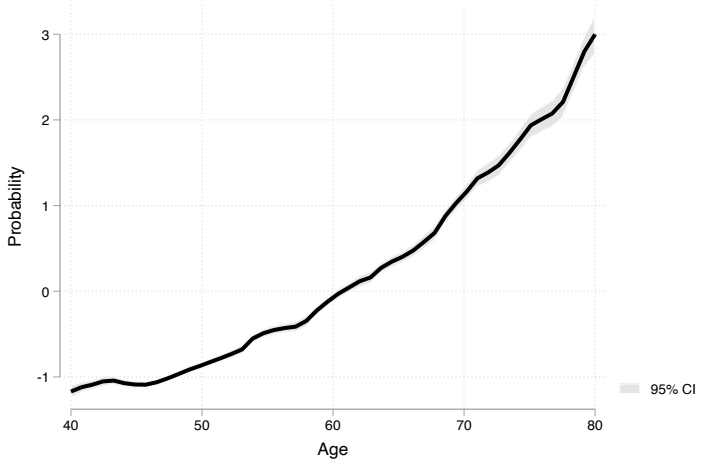
Table C1: Activities of daily living on self-reported health

	(1)	(2)	(3)
ADL Score (Sum)	-0.034^{***}		
	(0.000)		
ADL Score (Std)		-0.160^{***}	
		(0.002)	
ADL Score (PCA)			-0.051^{***}
			(0.001)
R-squared	0.144	0.144	0.134
Observations	71,793	71,793	71,723

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: This table reports the effect of Activities of Daily Living (ADLs) on self-reported health. We present the coefficients and standard errors for the ordinary least squares estimates of the sum of all ADL indicators, the standardized sum of all ADL indicators and a Principal Component score of all ADL indicators on self-reported health. The dependent variable is an indicator of good health which takes on a value of zero if self-reported health is good and takes on a value of one if self-reported health is bad. Each ADL indicator switches on if an individual is facing difficulty with that particular activity.

(a) Full sample



(b) By gender

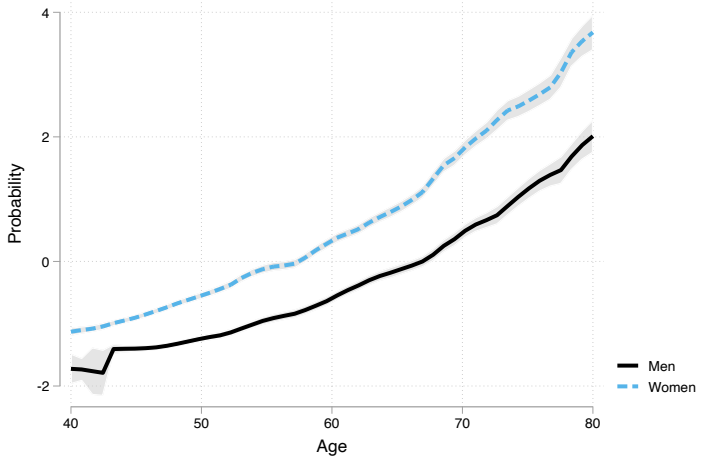
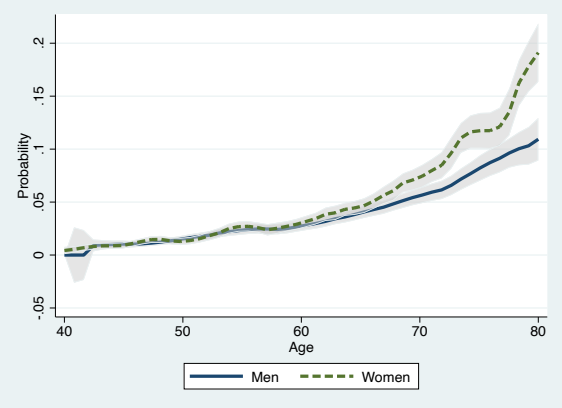
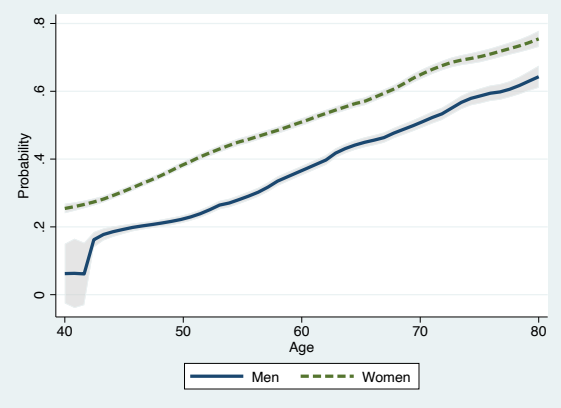


Figure C1: Average difficulty in performing ADLs across age

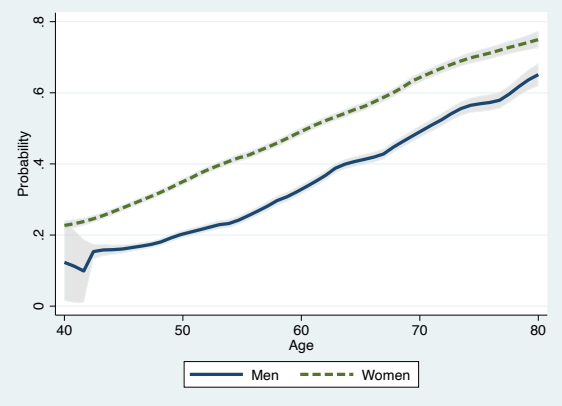
Notes: This figure shows the distribution of average prevalence of difficulty in completing Activities of Daily Living (ADLs) across age in the full sample and split by gender. Confidence intervals are depicted by the shaded region. The indicator for ADL performance difficulty is constructed using 22 individual ADL categories and standardizing the sum of the scores across each category. The variables are collected from Longitudenal Aging Survey of India (LASI), wave one, administered by IIPS.



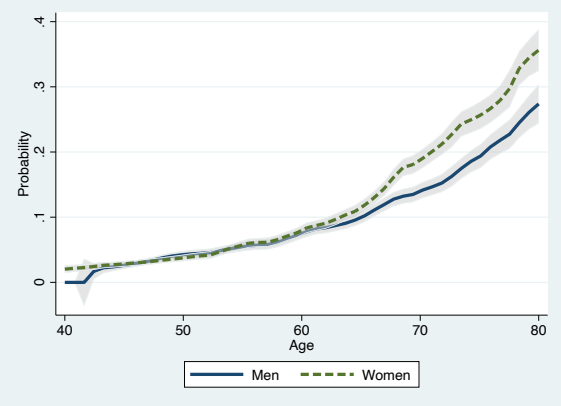
(a) Bathing



(b) Bending



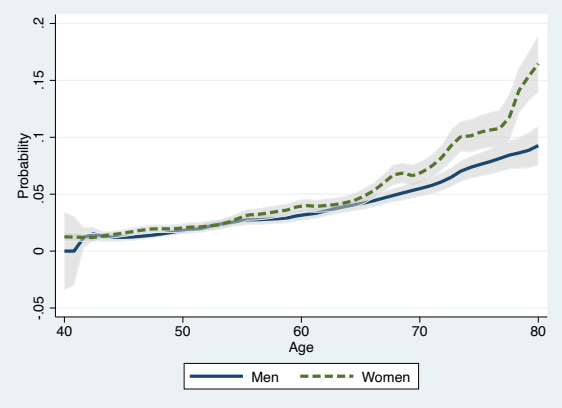
(c) Climbing stairs



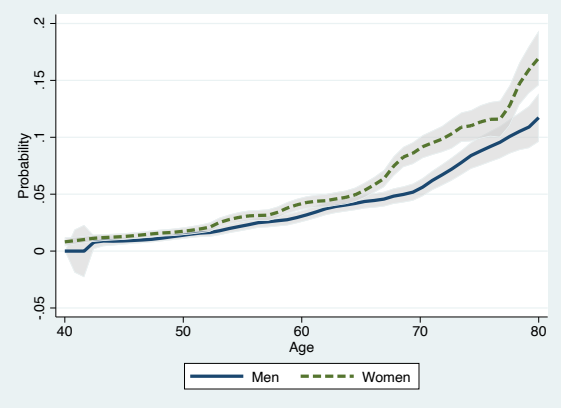
(d) Cooking

Figure C2: Average prevalence of difficulty in selected ADL categories across age

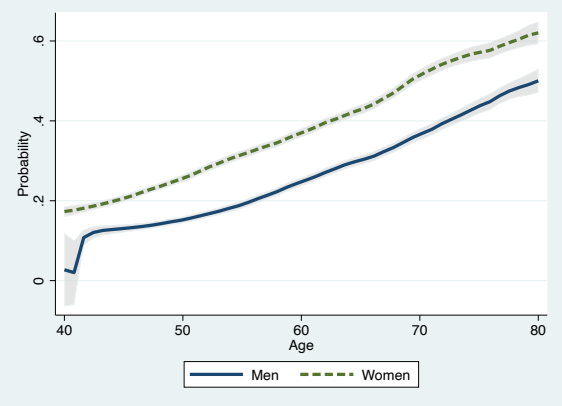
Notes: This figure shows the distribution of average prevalence of difficulty in completing Activities of Daily Living (ADLs) across age split by gender. Confidence intervals are depicted by the shaded region. Each indicator for an ADL switches on when an individual reports having difficulty in performing it at present. The variable is collected from Longitudenal Aging Survey of India (LASI), wave one, administered by IIPS.



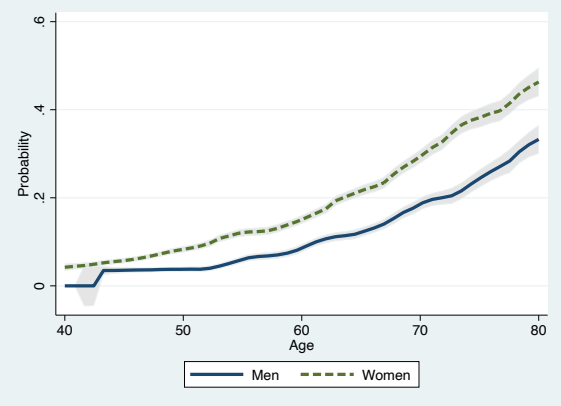
(a) Dressing



(b) Eating



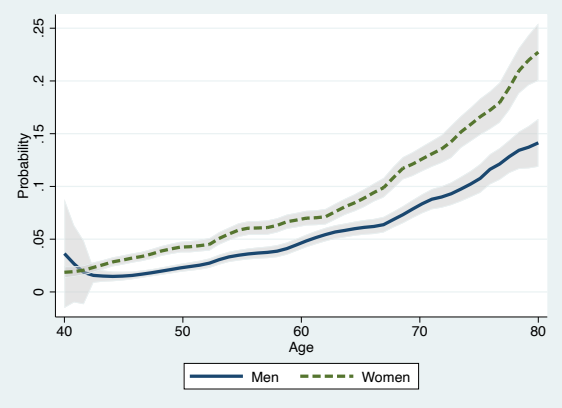
(c) Getting up



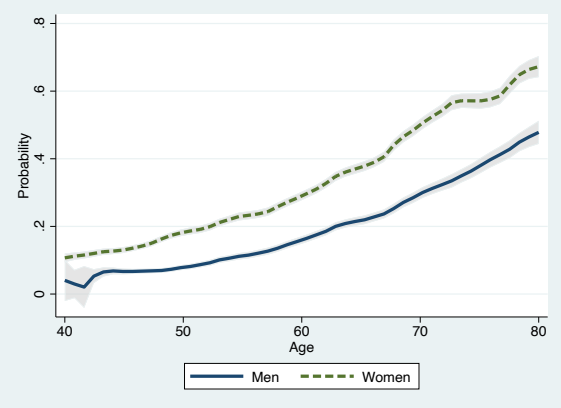
(d) Housework

Figure C3: Average prevalence of difficulty in selected ADL categories across age

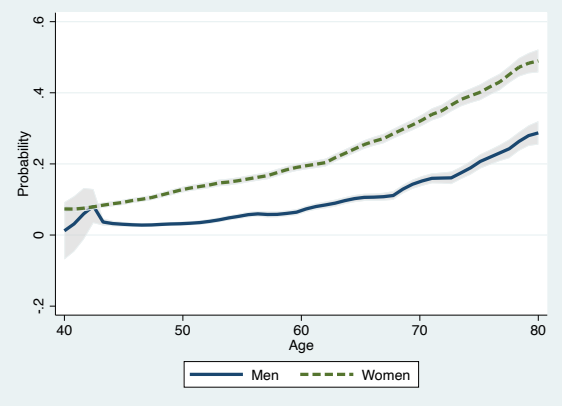
Notes: This figure shows the distribution of average prevalence of difficulty in completing Activities of Daily Living (ADLs) across age split by gender. Confidence intervals are depicted by the shaded region. Each indicator for an ADL switches on when an individual reports having difficulty in performing it at present. The variable is collected from Longitudenal Aging Survey of India (LASI), wave one, administered by IIPS.



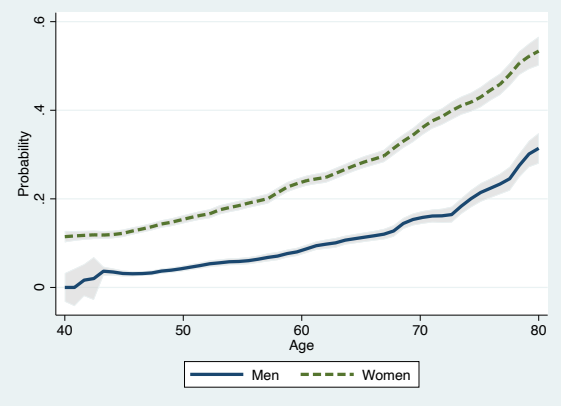
(a) Getting in and out of bed



(b) Lifting weight



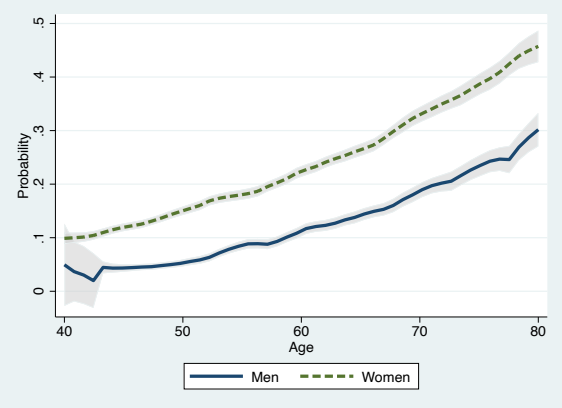
(c) Managing money



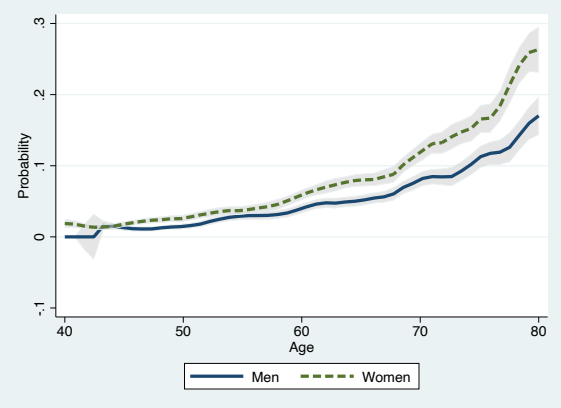
(d) Movement

Figure C4: Average prevalence of difficulty in selected ADL categories across age

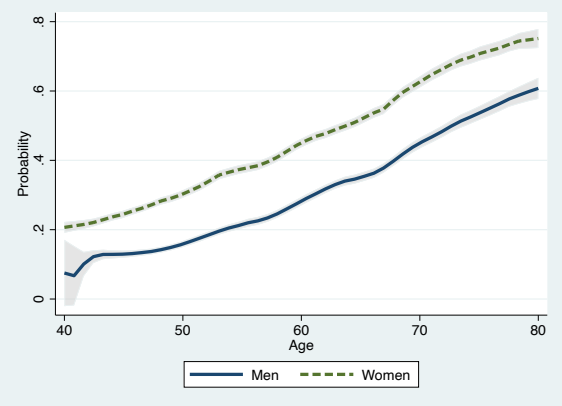
Notes: This figure shows the distribution of average prevalence of difficulty in completing Activities of Daily Living (ADLs) across age split by gender. Confidence intervals are depicted by the shaded region. Each indicator for an ADL switches on when an individual reports having difficulty in performing it at present. The variable is collected from Longitudenal Aging Survey of India (LASI), wave one, administered by IIPS.



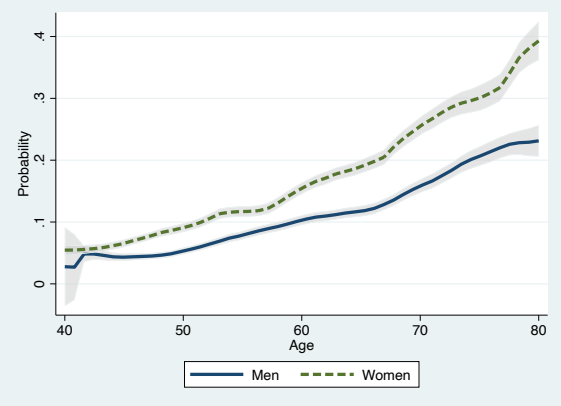
(a) Making phonecalls



(b) Picking up an object from the ground



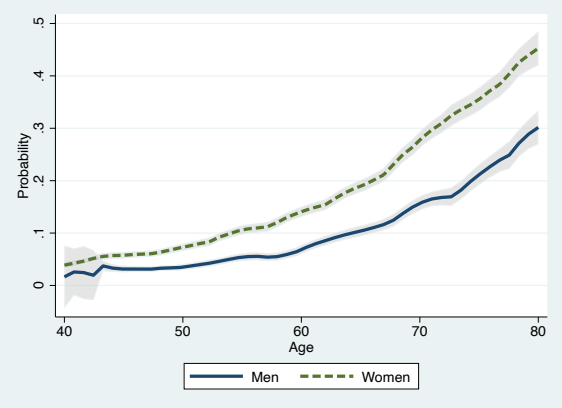
(c) Pushing and pulling movement



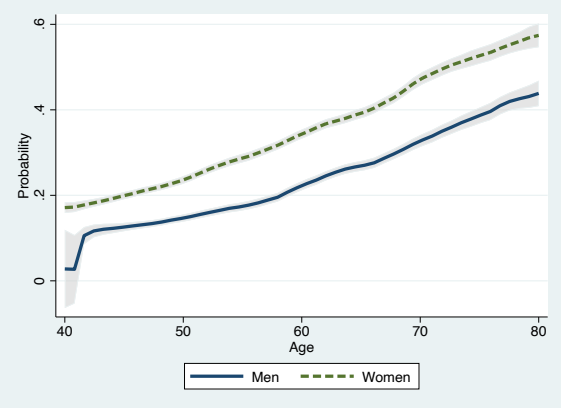
(d) Reaching out movement

Figure C5: Average prevalence of difficulty in selected ADL categories across age

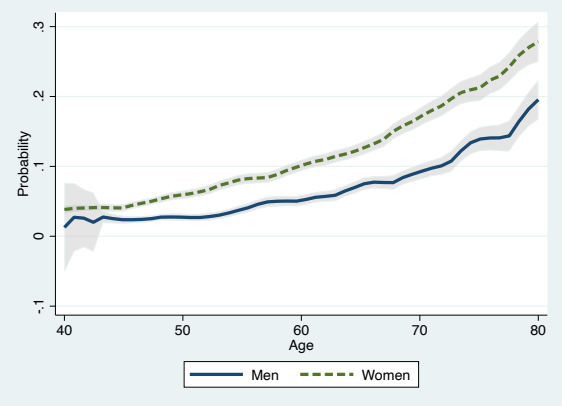
Notes: This figure shows the distribution of average prevalence of difficulty in completing Activities of Daily Living (ADLs) across age split by gender. Confidence intervals are depicted by the shaded region. Each indicator for an ADL switches on when an individual reports having difficulty in performing it at present. The variable is collected from Longitudenal Aging Survey of India (LASI), wave one, administered by IIPS.



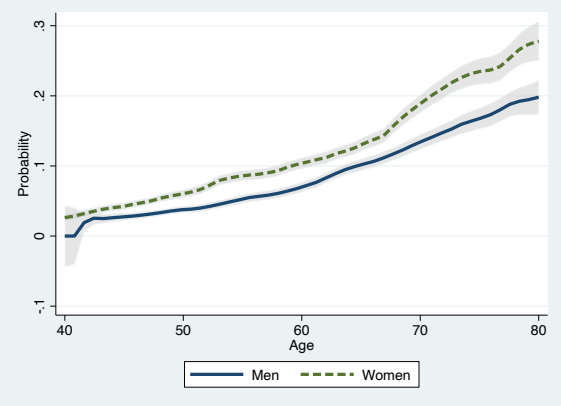
(a) Shopping



(b) Getting up after sitting long



(c) Taking medicines



(d) Using the toilet

Figure C6: Average prevalence of difficulty in selected ADL categories across age

Notes: This figure shows the distribution of average prevalence of difficulty in completing Activities of Daily Living (ADLs) across age split by gender. Confidence intervals are depicted by the shaded region. Each indicator for an ADL switches on when an individual reports having difficulty in performing it at present. The variable is collected from Longitudenal Aging Survey of India (LASI), wave one, administered by IIPS.

Table C2: Activities of daily living on self-reported health by gender

	(1)	(2)	(3)
Female	0.023	0.038	0.021
	(0.066)	(0.066)	(0.068)
ADL Score (Sum)	-0.037^{***}		
	(0.001)		
ADL Score (Sum) × Female	0.004^{***}		
	(0.001)		
ADL Score (Std)		-0.171^{***}	
		(0.003)	
ADL Score (Std) × Female		0.019^{***}	
		(0.004)	
ADL Score (PCA)			-0.055^{***}
			(0.001)
ADL Score (PCA) × Female			0.006^{***}
			(0.001)
R-squared	0.145	0.145	0.134
Observations	71,793	71,793	71,723

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: This table reports the effect of Activities of Daily Living (ADLs) on self-reported health by gender. We present the coefficients and standard errors for the ordinary least squares estimates of the sum of all ADL indicators, the standardized sum of all ADL indicators and a Principal Component score of all ADL indicators on self-reported health and compare it with the coefficient term when each independent variable is interacted with gender. The dependent variable is an indicator of good health which takes on a value of zero if self-reported health is good and takes on a value of one if self-reported health is bad. Each ADL indicator switches on if an individual is facing difficulty with that particular activity.

D Appendix: Descriptives on Cognition

Table D1: Cognition on self-reported health

	(1)	(2)	(3)
Cognition Score (Sum)	0.003***		
	(0.000)		
Cognition Score (Std)		0.056***	
		(0.003)	
Cognition Score (PCA)			0.020***
			(0.001)
R-squared	0.072	0.072	0.071
Observations	71,874	71,874	37,522

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: This table reports the effect of cognition variables on self-reported health. We present the coefficients and standard errors for the ordinary least squares estimates of the sum of all cognition indicators, the standardized sum of all cognition indicators and a Principal Component score of all cognition indicators on self-reported health. The dependent variable is an indicator of good health which takes on a value of zero if self-reported health is good and takes on a value of one if self-reported health is bad. Each cognition indicator switches on if an individual is able to correctly execute that particular cognitive activity.

Table D2: Cognition on self-reported health by gender

	(1)	(2)	(3)
Female	0.074	−0.013	0.060
	(0.075)	(0.074)	(0.116)
Cognition Score (Sum)	0.004***		
	(0.000)		
Cognition Score (Sum) × Female	−0.001***		
	(0.000)		
Cognition Score (Std)		0.071***	
		(0.004)	
Cognition Score (Std) × Female		−0.025***	
		(0.004)	
Cognition Score (PCA)			0.026***
			(0.002)
Cognition Score (PCA) × Female			−0.011***
			(0.002)
R-squared	0.073	0.073	0.073
Observations	71,874	71,874	37,522

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: This table reports the effect of cognition variables on self-reported health by gender. We present the coefficients and standard errors for the ordinary least squares estimates of the sum of all cognition indicators, the standardized sum of all cognition indicators and a Principal Component score of all cognition indicators on self-reported health and compare it with the coefficient term when each independent variable is interacted with gender. The dependent variable is an indicator of good health which takes on a value of zero if self-reported health is good and takes on a value of one if self-reported health is bad. Each cognition indicator switches on if an individual is able to correctly execute that particular cognitive activity.