For Shorter or Poorer: Attitudes Toward the Trade-Off between Poverty and Mortality*

Benoit Decerf,[†] Olivier Sterck[‡], and Christopher Hoy[§]

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Abstract

Many policy decisions involve trade-offs between lives and livelihoods. We provide the first estimates for a new welfare parameter that expresses this trade-off in the longevity-poverty space. To do so, we conduct randomized survey experiments with 20,000 respondents across seven middle- and high-income countries. Both the median and mean responses imply that individuals are willing to spend no more than about two years in poverty to gain one additional year of life, sharply restricting the plausible range for this normative parameter. We show how these estimates can inform policy trade-offs related to long-run global development, pandemic responses, and climate change.

JEL: D63, I12, I15, I32, O15.

Keywords: Poverty, Mortality, Welfare, Preferences, Survey Experiment.

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[†]University of Namur, Belgium (DEFIPP research center), Email: benoit.decerf@unamur.be.

[‡]University of Antwerp and University of Oxford, Email: olivier.sterck@uantwerpen.be

[§]World Bank, University of Melbourne, and the Australian National University

1 Introduction

Many of the most consequential policy decisions involve trade-offs between improvements in material living standards and reductions in mortality risk. Governments confront such tensions in a wide range of contexts, including when allocating resources between health care and job creation, designing environmental regulations that reduce pollution at the cost of higher prices, and imposing restrictions on individual behavior during pandemics.

These trade-offs are framed in markedly different ways in economic analysis and in public deliberations. Within economics, especially in health and public economics, the dominant framework is the value of a statistical life (VSL), which converts changes in mortality risk into monetary units based on individuals' willingness to pay for small risk reductions (Viscusi, 1993). VSL-based cost–benefit analysis is widely used by government agencies and has a solid theoretical foundation. It still has limitations that matter for many policy decisions. VSL is designed to study *marginal* changes in incomes, and the distribution of these income shocks is typically ignored in cost-benefit analyses. However, environmental reforms or pandemic responses entail potentially *large* monetary losses and benefits, which may be unequally distributed.

More importantly, the VSL approach places an explicit monetary value on life, an aspect that many policymakers and members of the public find ethically or politically unpalatable. For policies that require public deliberations, the VSL may therefore not work as a steppingstone towards rational decisions. Indeed, public discourse and political decision-making often explicitly reject trade-offs that put a price on human life. During the COVID-19 pandemic, the Governor of New York famously declared that *"a human life is priceless, period!"*, while the French President vowed to protect the population *"whatever the cost"* (Macedo and Lee, 2025). While such statements may resonate morally, they provide little operational guidance. Treating life as lexicographically superior to material well-being implies that any material loss, however large, is acceptable if it saves lives.

A growing literature proposes an intermediate approach that compares years of life lost to years spent in poverty, rather than translating mortality into money (Baland et al., 2021, 2022). This perspective avoids placing a price on life, is (partly) sensitive to the distribution of economic losses, and offers a transparent way to integrate mortality into welfare analysis. It frames policy trade-offs as comparisons between two intrinsic welfare losses—premature death and life in poverty—rather than between life and abstract money amounts. Using this approach, Ferreira et al. (2021) and Decerf et al. (2021) contrast the mortality and poverty costs of the COVID-19 pandemic. However, this poverty-mortality approach relies on a key welfare parameter θ that captures the fraction of period utility lost when becoming poor. Equivalently, $1/\theta$ captures how many years spent in poverty are welfare-equivalent to one year of life lost. In the absence of empirical estimates of θ,

the approach remains difficult to implement in practice.

We provide the first estimates of the range of plausible values for the key parameter θ, by conducting a series of multi-layered, randomized survey experiments with 20,000 respondents across seven middle- and high-income countries to collect the general population's attitudes related to this parameter. This diverse set of countries (Colombia, India, Indonesia, Nigeria, South Africa, the United Kingdom, and the United States) is home to almost one-third of the world's population, with poverty and mortality levels varying widely. We rely on survey measures, which are ultimately stated preferences, because we are interested in large changes in people's own standard of living that can hardly be exogenously varied in any other way. In addition, we are interested in estimates that are broadly representative of the population across a variety of contexts. We implemented our study in line with best practices in the literature using survey experiments to capture preferences (Stantcheva, 2022).

The main questions we ask respondents is about their willingness to pay for a costly drug that would increase their remaining lifespan. We use two scenarios in which the drug's cost varies. One version frames the cost as implying that respondents and their households would spend the rest of their lives in poverty (as defined by national standards). The other version implies that their household income would be divided by two. This second version can be linked to parameter θ based on the microfoundations for θ established by Baland et al. (2022). For each scenario, respondents are asked about their interest in the drug under different conditions that vary their remaining lifespan if they remain untreated and their lifespan gain if they take the drug. We use the answers to these questions to estimate the distribution of θ in the general population in each country individually, and aggregate the results across countries. We conducted an array of robustness checks, including asking questions in first and third person, across different income levels, and collecting qualitative and quantitative responses.

Our results indicate a relatively narrow range of plausible values for θ. Median and mean estimates suggest that $\theta \in [0.5 - 1[$, implying that one year of life lost is, in welfare terms, equivalent to one to two years spent in poverty. Our benchmark estimate ($\theta = 0.75$) implies that one year of life lost is deemed as bad as 1.33 years spent in poverty. The order of magnitude for our estimates is quite robust. First, we show robustness across countries and demographic groups, including age, gender, education, parental status, rural vs. urban, and socio-economic groups. Second, we show robustness to an information treatment effect, where the standard-of-living implications of buying the costly drug are illustrated through pictures of what they would mean in practice. Third, we show robustness to a third-person perspective, while our benchmark questions are framed in a first-person perspective. Fourth, we show through regression analysis that the answers' correlations with question parameters and sociodemographic variables align with theoretical predictions. Fifth, we analyze answers to open-ended questions asking subjects

to justify their answers. The results suggest that subjects understand our questions and can provide adequate rationales for their answers. Finally, we designed built-in checks about whether respondents provided answers consistent with having transitive preferences. Excluding the subset of respondents who failed our transitivity test does not lead to substantial differences to our results.

Our finding that one year of life lost is valued as equivalent to roughly one to two years spent in poverty implies that poverty reduction remains a central policy objective alongside efforts to reduce premature mortality. Using our lower-bound estimate ($\theta = 0.5$), we show that the global progress recorded over national poverty and premature mortality over the period 1980-2020 is 54% attributable to poverty reduction and 46% attributable to mortality reduction. Using estimates from Decerf et al. (2024) for the additional poverty and excess mortality generated by the COVID-19 pandemics over the period 2020-2021, we show that our narrower plausible range for θ allows stronger conclusions. Unlike these authors, we can unambiguously conclude that additional poverty has been a larger source of well-being losses than excess mortality in low-income countries and in lower middle-income countries. The reverse holds in upper middle-income countries and high-income countries. Finally, we illustrate the policy relevance of this parameter using the example of energy subsidy reform, a canonical case in which large mortality gains from reduced air pollution must be weighed against higher energy costs for poor households. The analysis demonstrates that uncertainty about the poverty–mortality trade-off alone can overturn welfare conclusions, underscoring the value of reducing this uncertainty by empirically estimating this parameter.

Our paper builds on three separate literatures. First, the starting point is the handful of papers that pioneered the poverty lens to the tension between lives vs livelihoods (Ferreira et al., 2021; Decerf et al., 2021).[1] These papers took inspiration from another strand of literature aiming at introducing mortality into poverty measurement Riumallo-Herl et al. (2018), Baland et al. (2021) and Baland et al. (2022).[2] Our main contribution is to provide the first empirical estimates for the parameter θ. These estimates open the road for applications, as well as for the integration of mortality into official poverty statistics.

Second, we take inspiration from the well-established literature that empirically estimates the value of a statistical life (Kniesner and Viscusi, 2019). This mature literature elicits the VSL using an array of different methods, like revealed preferences based on labor market outcomes (Kniesner et al., 2012) or stated preferences collected through

[1] Decerf et al. (2024) extend their analyses with updated data. Moreover, they also account for the well-being costs of school closures by estimating the number of additional poverty-years that the related learning losses may generate in the future.

[2] Earlier contributions on the introduction of mortality into poverty measurement include Kanbur and Mukherjee (2007) and Lefebvre et al. (2013). These papers do not consider binary poor vs non-poor statuses and thus do not rely on parameter θ.

surveys (Lindhjem et al., 2011). Our main question borrows from the latter the disease-drug context to elicit attitudes related to lives vs livelihoods. We propose a new design for survey instruments probing attitudes on longevity and large income losses. To reduce the cognitive complexity of dealing with probabilities, our design relies on deterministic longevity outcomes. Ongoing work by the GiveWell NGO uses our design.

Third, we contribute to the recent literature using cross-country online survey experiments to understand people's policy preferences. This research agenda has been pioneered by seminal studies, such as Kuziemko et al. (2015) on preferences for redistribution, Alesina et al. (2022) on immigration preferences, Stantcheva (2021) on attitudes towards taxation, and recently Dechezleprêtre et al. (2025) on views about climate change. While existing work has shed unparalleled insights, we are the first to apply its methods to examine preferences regarding the trade-off between lives and livelihoods, a first-order consideration in a range of policy decisions.

The remainder is organized as follows. The VSL and poverty approaches to the tension between lives and livelihoods are introduced and contrasted in Section 2. The design of our survey instruments is presented in Section 3. Survey results are presented in Section 4. We illustrate the relevance of our results in Section 5. Concluding comments are provided in Section 6.

2 The poverty vs longevity trade-off: Theory

In this section, we introduce the main parameter to be estimated. We first present and discuss the value of a statistical life (VSL), the mainstream metric used to navigate policy tradeoffs between lives and livelihoods. We then present a recently proposed alternative metric, which compares years in poverty and years of life lost. We explain why this alternative metric can be a helpful complement to the VSL, especially for policy decisions that require public deliberations. However to date, one constraint preventing its widespread use is the lack of estimates for its main parameter.

2.1 Lives, Livelihoods and the VSL

The mainstream metric for navigating the tension between lives and incomes is the value of a statistical life (VSL), a notion with a well-established tradition (Schelling, 1968; Rosen, 1988; Viscusi, 1993). Loosely speaking, the VSL is the willingness-to-pay to reduce fatality risks so that exactly one fewer death is expected. Conceptually, the VSL is the local trade-off between fatality risk and money. Formally, this willingness-to-pay is determined from the expected discounted present value of lifetime utility. Assuming for

simplicity a constant yearly income (or consumption),[3] denoted by $x > 0$, and a constant probability to die every year, denoted by $\pi > 0$, lifetime utility can be written

$$U(x, \pi) = \sum_{\tau=t}^{\infty} \frac{1}{(1+\rho)^{\tau-t}} \times u(x) \times (1-\pi)^{\tau-t}, \tag{1}$$

where $\rho \geq 0$ is the discount factor and $u : \mathbb{R} \to \mathbb{R}$ is the period utility function. For Equation (1), the VSL is formally defined as (see Equation 9 in Boarini et al. 2022)

$$VSL = -\frac{\partial U/\partial \pi}{\partial U/\partial x}. \tag{2}$$

The VSL approach expresses the trade-off between lives and livelihoods in monetary units. A mature literature aims at estimating the VSL in different contexts using different approaches, as reviewed by Kniesner and Viscusi (2019).

The VSL is conceptually sound and constitutes a reasonable guide for policy decisions of a technical nature, say about the safety features of public infrastructure. VSL estimates are routinely used for cost-benefit policy analysis by several government agencies in the US and elsewhere (Kniesner and Viscusi, 2019).[4]

However, the VSL suffers from a number of limitations that in practice hinder its use for some policy questions for which public debates are necessary. First, the VSL is non-palatable to many people who deem disgusting the mere idea of selecting a value for the "price of a life". As a result, it can scarcely serve as the basis of a productive public debate on the tension between lives and livelihood. The examples provided in the Introduction illustrate that this limitation was critically felt during the COVID-19 pandemic when selecting across different social distancing options. The refusal from the public to place a price on human life incentivizes politicians to ignore the tension between lives and livelihoods and may thus push them to enact policies that save lives at prohibitive costs (Macedo and Lee, 2025).

Second, the VSL does not account for the distribution of economic costs. Indeed, cost-benefit analyses based on the VSL typically sum all economic losses, independently of whether these losses are incurred by rich or poor individuals. This limitation might be less of an issue for public funds investments in infrastructure, but matters more for anti-poverty, health, or environmental policies whose economic impact is heterogeneously distributed across individuals (Sunstein, 2023).

Third, the VSL does not naturally yield an easy-to-communicate summary indicator that combines lives and livelihoods in a way that facilitates monitoring progress and cross-

[3] Although consumption and income are conceptually distinct, for our purposes, we can use the two terminologies interchangeably.

[4] However, one should note that, when longevity has value, capturing willingness-to-pay in monetary units, like the VSL does, rather than capturing it in "life years" units is criticized by some authors on ethical grounds (Canning, 2007).

country comparisons. To be sure, the VSL approach can be used to calibrate summary indicators to monitor progress and contrast well-being across countries (Becker et al., 2005; Jones and Klenow, 2016). However, these summary indicators are *social welfare functions* whose values have no straightforward interpretations.[5] These indicators have a high degree of ethical validity, but they are confined in specialized circles, in part because their interpretation is not easily communicable.

2.2 Alternative metric based on poverty

An alternative to the VSL approach recently emerged from a literature whose aim is to integrate mortality into poverty measurement (Riumallo-Herl et al., 2018; Baland et al., 2021).[6] A meaningful integration requires a lifecycle perspective. The intuition is that the death of an individual today leads to a loss of life *for several years to come*, i.e., to a number of years of life lost (YLL). In contrast, poverty measures capture poverty outcomes today, i.e., *in one given year*. The mainstream poverty measure, the poverty headcount, essentially captures a number of poverty-years (PY), i.e., the number of people that are considered poor in the year in which poverty is measured. Hence, a measure that combines the poverty and death outcomes *observed in the same year* must add the well-being losses (WBL) generated by the associated numbers of PYs and YLLs (Decerf et al., 2021), so that the "total" well-being losses are proportional to a weighted sum of these two types of years, namely

$$Total\ WBL \ \propto \ \#PY + \frac{1}{\theta} \times \#YLL \tag{3}$$

where the ratio $\frac{1}{\theta} \geq 1$ captures how many PYs yield the same well-being loss as one YLL. The constraint that one PY leads to a well-being loss no larger than one YLL is an assumption imposed for policy relevance.[7] Baland et al. (2022) propose a summary index based on this "poverty" approach, which they call the Poverty-Adjusted Life Expectancy

[5] For this reason, empirical findings based on these SWFs are typically expressed as the income growth under a counterfactual scenario that would yield an equivalent change in social welfare as the one evaluated.

[6] Such integration is motivated by (i) the desire to move away from a purely monetary definition of poverty and (ii) the "mortality paradox", i.e., the fact that poverty measures infamously *decrease* when mortality is selective so that poor individuals live shorter lives (Kanbur and Mukherjee, 2007; Lefebvre et al., 2013).

[7] Even though one can always point to cases of destitute people who might be deemed worse off than if they were dead, policies can hardly be designed on the assumption that the death of a poor individual is a social improvement.

(PALE), which is defined as

$$PALE_\theta = LE \times (1 - \theta \times H), \tag{4}$$

$$= \underbrace{LE \times (1 - H)}_{Poverty-Free\ Life-Expectancy} + \underbrace{LE \times H}_{Poverty\ Expectancy} \times \underbrace{(1 - \theta)}_{Weight\ of\ one\ PY} \tag{5}$$

where LE denotes life-expectancy at birth, H denotes the poverty head-count ratio, and $\theta \in [0, 1]$ is the same normative parameter. PALE counts the number of years a newborn expects to live, but weighs down the years she expects to live in poverty by the factor $(1 - \theta)$. These authors show that PALE is normatively grounded on expected lifetime utility, the measure of social welfare proposed by Harsanyi (1953). One key condition for this result is the assumption that income is not a continuous but rather a binary variable, i.e., individuals are either poor or non-poor. Most importantly, their result allow relating parameter θ to the period utility function u as follows

$$\theta = \frac{u(x_{NP}) - u(x_P)}{u(x_{NP}) - \underbrace{u(DEAD)}_{=0}} \tag{6}$$

where x_{NP} and x_P are respectively the typical incomes of non-poor and poor individuals, $u(DEAD)$ is the utility of being dead and without loss of generality is normalized to zero, and by assumption $u(x_{NP}) \geq u(x_P) \geq u(DEAD)$. Hence, parameter θ corresponds to the fraction of period utility that is lost when becoming poor, i.e., when consumption is reduced from x_{NP} to x_P. This definition is illustrated in Figure 1, where $\dot{x}$ denotes the welfare-neutral income, i.e., the threshold income level below which utility is lower than $u(DEAD)$, i.e., $u(\dot{x}) = u(DEAD)$.

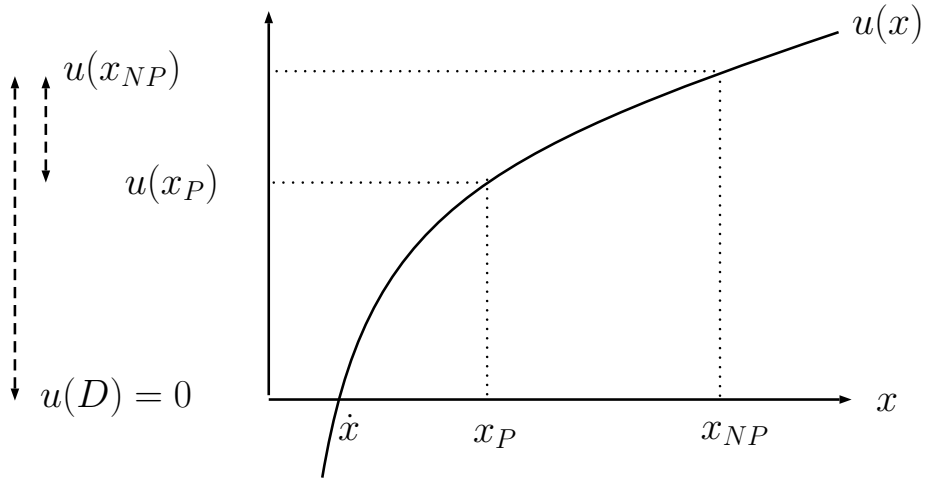


Figure 1: Parameter $\theta = \frac{u(x_{NP}) - u(x_P)}{u(x_{NP}) - u(DEAD)}$ corresponds to the fraction of period utility lost when becoming poor.

For $\theta = 0$, when assuming that no utility is lost when becoming poor for one year

(compared to the utility loss of being dead for one year), PALE boils down to life-expectancy at birth. For $\theta = 1$, when being poor is deemed as bad as being dead, PALE boils down to poverty-free life-expectancy, the indicator proposed by Riumallo-Herl et al. (2018).[8]

We view this alternative "poverty" approach to measuring the tension between lives and livelihoods to be complementary to the VSL approach because these two approaches have different advantages and weaknesses. First, one weakness of the poverty approach is that it captures incomes in a much cruder way than the VSL.[9] Unlike the VSL, which captures income as a continuous variable, the poverty approach treats income as a binary variable. Changes in incomes that do not alter individuals' poverty statuses are thus not recorded. This coarse treatment of incomes is the hallmark of the poverty headcount, the poverty index most used in practice. Importantly, this coarse treatment comes with a great benefit: it makes this index easy to communicate to a non-specialized audience. Unlike social welfare functions, the poverty headcount is regularly discussed in the media. This illustrates there can be trade-offs between the ethical validity of an index and its simplicity of use and communication (Kraay et al., 2023).

A second weakness of the poverty approach is that it requires selecting a monetary value for the poverty line. In a given country, the value for parameter θ depends on the poverty line considered. To be sure, the same issue affects the whole poverty measurement literature, whose poverty comparisons depend on the poverty line considered (Sterck, 2024). This is particularly problematic when there is no consensus on how to define the poverty line (Decerf, 2025). Fortunately, in many contexts, there exists an official or a widely accepted definition for the poverty line. Most countries have national poverty lines. Again, this weakness comes with a benefit: the poverty approach does not account for income losses incurred by rich individuals. By focusing on income losses at the bottom of the distribution, the poverty approach is locally sensitive to the distribution of monetary losses.[10]

Third, we argue the "poverty" approach is likely to be more palatable to the layperson because it expresses the trade-off between lives and livelihoods in "human-centric" units, based on two kinds of years of human life, without monetizing life. If people find the trade-off between PYs and YLLs less disgusting that trade-offs monetizing life, then it could help guide public debates towards rational solutions.

[8] For intermediate values of θ, PALE corresponds to the equivalent number of years of life spent out of poverty.

[9] In contrast, the VSL approach captures mortality in a cruder way than the poverty approach, as the latter accounts for the number of YLLs associated to a death, while the former typically does not. However, it is possible to adjust the VSL approach to account for this number, e.g., through the value of a statistical life year (Kniesner and Viscusi, 2019).

[10] Adler et al. (2014) or Ferranna et al. (2023) study how to adjust the VSL to account for distributional aspects, but arguably their solution based on social welfare functions is more technical and thus less communicable to non-specialized audiences. As shown by Kraay et al. (2023), simpler welfare metrics are used much more frequently, even when they are conceptually weaker.

Fourth, the poverty approach comes with a summary indicator combining lives and livelihoods (PALE) that could plausibly be communicated beyond specialized audiences (Baland et al., 2022). For instance, World Bank (2022) relied on PALE to contrast the heterogeneous impacts on well-being of the COVID-19 pandemic. PALE might thus help monitor progress and allow for cross-country comparisons.

2.3 Restricting the plausible range for θ

Our objective in this paper is to estimate the range of plausible values for the key welfare parameter θ, which captures how many years spent in poverty are welfare-equivalent to one year of life lost. Without empirical guidance, the poverty–mortality approach cannot be operationalized in applied welfare analysis.

One natural possibility is to infer θ from existing estimates of the VSL. However, as shown in Appendix A.1.1, this exercise is not straightforward because of key differences in the theoretical assumptions underlying the VSL and the poverty–mortality framework. The VSL identifies a marginal rate of substitution between income and mortality risk, whereas θ concerns a large, non-marginal change in living standards (namely falling into poverty). Translating marginal VSL estimates into values for θ therefore requires strong assumptions about the curvature of the period utility function. As we show in the Appendix, plausible values for the elasticity of intertemporal substitution or for the income elasticity of the VSL imply a very wide range of values for θ (from 0.04 to 0.94), which is too broad to be informative for empirical applications.

For these reasons, our preferred strategy is to estimate θ directly using stated preferences. Revealed-preference approaches are often considered as more trustworthy, but they are hardly feasible in this context: large, discrete changes in living standards such as a permanent fall into poverty cannot be ethically or practically randomized, and real-world choices involving such extreme trade-offs are rarely observed in a way that permits credible identification. We therefore design survey instruments that confront respondents with transparent, structured choices between longevity and living standards, allowing us to recover and analyze the distribution of θ in different populations. Stated preferences have the significant benefit that they can be deployed at scale, allowing us to assess cross-country differences. The next section describes the design of these instruments and the identification strategy in detail.

3 Study Design

3.1 Sample Selection and Sample Size

To collect real-world estimates of people's stated preferences regarding the trade-off between living standards and lifespan (i.e., between poverty-years and years of life lost), we implemented a large-scale randomized survey experiment with nearly 20,000 respondents across seven countries: Colombia, India, Indonesia, Nigeria, South Africa, the United Kingdom, and the United States. We selected this diverse set of countries so that we could determine if the findings were likely to hold across a variety of contexts (i.e., be externally valid).[11] The average income per capita in 2024 (measured in GNI per capita Atlas Method) varies from as low as $1,250 in Nigeria to as high as $83,660 in the United States (WorldBank, 2025). Life expectancy in 2023 varied from 54 years in Nigeria to 81 years in the United Kingdom (WorldBank, 2025). In this paper, we consider national poverty lines, as proxied by the World Bank's Societal Poverty Line (SPL) developed by Jolliffe and Prydz (2021).[12] In 2024, the Societal Poverty Line varied in our sample from $950 per person per year in Nigeria to $16,800 per person per year in the United States.[13]

We surveyed at least 2,000 respondents in each of the seven countries (over 6,000 respondents in the case of the United States). This sample size for each country is similar to what has been used in other cross-country randomized survey experiments (Kuziemko et al., 2015; Hoy and Mager, 2021; Stantcheva, 2022). As such, we had adequate statistical power to detect meaningful heterogeneity in line with existing studies. The sample in each country was broadly representative of the internet-using population in terms of age and gender, and the survey was implemented by YouGov. As is the case in other online surveys in middle-income countries (e.g., Dechezleprêtre et al. 2025, Hoy 2025, Hoy et al. 2026), the internet-using population tends to have much higher levels of education than the general population (see Table A.5 in Appendix). This is also the case in our study (Appendix Table A.5). Survey responses can be reweighted to better match the characteristics of the general population, and some evidence suggests that such adjustments may allow online surveys to approximate offline populations (Grewenig et al., 2023). In our case, applying inverse probability weights to correct for educational differences yields nearly identical results (Appendix Table A.6), consistent with our finding that education is uncorrelated with the outcomes of interest.

The cross-country survey was conducted in two waves. The first wave took place in

[11] These countries were also selected based on their population size, data availability (including pictures that we used for our information treatment), and the feasibility of implementing an online survey with a large sample of respondents.

[12] Jolliffe and Prydz (2021) propose a weakly relative poverty line computed as $z^S = 1 + 0.5 \times \tilde{x}$ where $\tilde{x}$ is median income in the country ($PPP2017 per person per day). They define the SPL by regressing national poverty lines on countries' median incomes. As a result, the SPL provides a reasonable approximation of a country's national poverty line.

[13] See Appendix A.2.1 for the level of the Societal Poverty Line in each country in our sample.

2024 in India, Nigeria, South Africa, the United Kingdom, and the United States. The second wave took place in 2025 in Colombia, Indonesia, and the United States. The survey instruments were identical in each country within a given wave (except for a small number of country-specific characteristics, such as the Societal Poverty Line) and were translated into the most spoken language in each country. The two waves had similar designs, although there were a few differences, such as the information treatments being included only in the first wave, and the parameters used in the scenarios presented to respondents varied across waves (see the following subsection for details).

3.2 Overview of Survey Design

The surveys consisted of six main sections. The first section collected people's demographic characteristics and prior beliefs that are likely to be relevant to this topic, such as their belief in an afterlife, expected age of death, and caring responsibilities (e.g., whether they have children). The second section collected respondents' qualitative preferences regarding the trade-off between living standards and lifespans. This involved introducing a scenario whereby they could take a "drug" to live for a longer time period, but this had the cost of them spending the rest of their life living on half of the respondent's household income. The third section collected respondents' quantitative preferences regarding this trade-off by randomly allocating them to a series of "binary" questions that varied the length of their remaining life and the additional years of life from the drug, with the cost meaning they would have to live on half their income. The fourth and fifth sections were identical to the second and third sections, except that the cost of the drug was to live below the Societal Poverty Line for their country (they were provided with the exact level of income this would imply in local currency units per capita). Finally, the second wave of the survey included a series of more general questions that respondents could answer in the third person about the trade-off between living standards and lifespan that they believed the average person in their country would hold.

Our surveys included several features designed to maximize data quality, consistent with the guidance in Stantcheva (2022). First, we include a description at the start of the survey explaining that we are independent researchers, that the study is non-partisan, and that respondents must provide complete attention throughout (or risk missing out on compensation). Second, attention checks throughout the survey remind respondents that they must give their full attention or risk disqualification from the survey. Third, logic checks are incorporated throughout the survey, enabling us to verify whether respondents' preferences are transitive. Finally, respondents must view the information treatments for at least five seconds before they advance to the next stage of the survey.

3.3 Rationale Behind Questions Estimating θ

Respondents faced with a series of *binary* choices, each capturing a single trade-off between living standards and lifespan. We use a classic context used in VSL studies, namely the decision to take a costly drug when confronted with a fatal disease. To keep questions as simple as possible, choices did not involve uncertainty.[14] The strength of this approach lies in the simplicity of the questions, which, we believe, enabled respondents to provide meaningful answers. We randomly vary the magnitude of the trade-off across questions and between respondents.

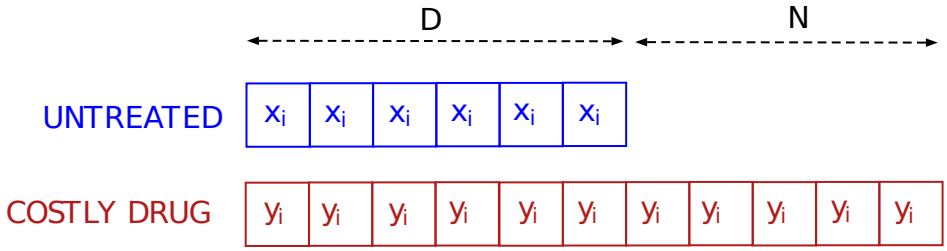


Figure 2: Respondent i makes a choice between two residual lives, a shorter one at their current standards of living x_i and a longer one at a smaller standards of living y_i.

Respondents are asked whether they would be willing to take a costly drug (e.g., at the cost of spending the rest of their life living below the Societal Poverty Line for their country) that will extend their residual lifespan by a deterministic number of years. That is, any respondent i must choose between two residual lives, which are illustrated in Figure 2. When choosing to remain untreated, i will still live for D years at their current standard of living x_i. In contrast, when choosing the costly drug, they will still live for $D+N$ years at the lower standard of living y_i (where $y_i < x_i$). As there is no uncertainty involved in the question, a rational respondent i would evaluate her "untreated" residual life by discounting utility, i.e., Equation(1) simplifies to

$$U_i(x_i, T) = \sum_{\tau=1}^{T} \frac{1}{(1+\rho_i)^{\tau-1}} \times u_i(x_i), \tag{7}$$

where T is the number of years of the "untreated" residual life (and similarly for the "costly drug" residual life). From Equation (7), respondents chose the costly drug over remaining untreated when

$$u_i(y_i) + \cdots + \frac{1}{(1+\rho_i)^{D+N-1}} \times u_i(y_i) > u_i(x_i) + \cdots + \frac{1}{(1+\rho_i)^{D-1}} \times u_i(x_i)$$

[14] In the case of VSL, questions typically entail uncertainty: respondents are asked about their willingness to pay to reduce the risk of mortality. To simplify decision-making, our main question does not involve any uncertainty: respondents were asked to choose between two alternative deterministic residual lives. Adler et al. (2025) used a similar approach when eliciting support for the fair innings principle.

Rearranging, respondent i choses the costly drug when

$$\underbrace{\frac{u_i(x_i) - u_i(y_i)}{u_i(x_i) - u_i(\dot{x})}}_{:=\beta_i^{y_i}} < \underbrace{\frac{\delta_i^D - \delta_i^{D+N}}{1 - \delta_i^{D+N}}}_{:=\hat{\beta}(\rho_i)} \tag{8}$$

where $\delta_i := \frac{1}{(1+\rho_i)} \in [0,1]$ is smaller when i discounts the future more heavily. The LHS in Equation (8), denoted by $\beta_i^{y_i}$, captures the fraction of period utility lost when income decreases from the current income x_i to the smaller y_i. The RHS in (8), denoted by $\hat{\beta}(\rho_i)$, captures the threshold value tested for $\beta_i^{y_i}$ (given the values for parameters D and N) under which respondent i choses the costly drug, rather than remaining untreated.

In our empirical analysis, we assume that all respondents discount the future in the same way, i.e., $\rho_i = \rho$ for all i. We consider two different values for ρ, namely no discounting ($\rho = 0$) and a 3% discount rate. In the absence of discounting, the threshold value simplifies to $\hat{\beta}(0) = \frac{N}{D+N}$.

One key design feature is the *definition of the cost* associated to taking the drug, i.e., what is the value for y_i. We consider two different definitions for this cost. The reason is that any choice comes with caveats. Our objective is that one definition avoids the main limitations of the other, and vice-versa. If that is the case, the findings that are valid under both definitions show some robustness to these unavoidable limitations.

The first definition is that the drug is so costly that the respondent becomes poor, i.e., $y_i = x_P$. We refer to this version of our main question as the "**poverty cost**" question. This definition of the cost is our preferred because it more directly relates to the definition of θ. Indeed, for respondents who earn the typical income in their society, i.e., $x_i = x_{NP}$, the question directly probes their personal value for θ, i.e.,

$$\beta_i^{x_P}|_{x_i = x_{NP}} = \frac{u_i(x_i = x_{NP}) - u_i(x_P)}{u_i(x_i = x_{NP}) - u_i(\dot{x})} = \theta_i. \tag{9}$$

Even when anchoring "being poor" in the monetary value of the poverty line of respondent's country, some respondents may only have a vague idea what it means to live in poverty, especially for those who have never had such experience. This is a key difficulty when relying on contingent valuation. Respondents may thus find it hard evaluating how much period utility they would lose when moving from their current standard of living to being poor if the latter situation is too abstract for them. To probe the extent of this issue, we run a treatment with visual information on what it means to be poor in their country (see Subsection 4.2 for details).

The second question is thus designed to reduce the difficulty of relating to the lower standard of living y_i, by focusing on the case when the respondent's household income is halved, i.e., $y_i = x_i/2$. We refer to this version as the "**half-income cost**" question.[15]

[15]For the sake of short language, we often write "half income" rather than "half household income".

This version is arguably less abstract given that respondents know the standard of living associated with their current household income and so could possibly imagine what it means to live with half of it. However, this version relates less directly to the definition of θ. Indeed, the preference parameter probed ($\beta_i^{x_i/2}$) only relates to the respondent's personal value for θ under two conditions: (i) the respondent is poor when her household income is halved, i.e., $x_i/2 = x_P$ and (ii) the respondent's household earn the typical income in her society, i.e., $y_i = x_{NP}$. It is only under these two conditions that

$$\beta_i^{x_i/2}|_{x_i=x_{NP},x_i/2=x_P} = \frac{u_i(x_i = x_{NP}) - u_i(x_i/2 = x_P)}{u_i(x_i = x_{NP}) - u_i(\dot{x})} = \theta_i. \tag{10}$$

We discuss below in Subsection 3.6 the difficulty for conditions (i) and (ii) to be met and what it means for the estimate for θ obtained from the "half-income cost" questions.

A limitation of the "half-income cost" version is that it may lead us to underestimate θ. Respondents may not interpret a 50% income loss as implying a 50% reduction in lifetime standards of living. For instance, they may expect to smooth consumption using assets or to increase labor supply to offset part of the shock. Some may also have a narrower notion of "income" in mind (e.g., own earnings or labor income only), despite our clarification that it refers to household income. In all these cases, the perceived utility cost is smaller than intended. As a result, respondents are more likely to accept the costly drug, i.e. more likely to reveal a preference parameter $\beta_i^{x_i/2}$ below the tested threshold $\hat{\beta}^{x_i/2}(\rho)$ and thus biasing our estimate of θ downward. These concerns do not apply to the "poverty cost" version, where respondents are explicitly told they would spend the rest of their lives in poverty.

3.4 Exact Wording of Questions Estimating θ

Figure 3 shows the exact wording and sequencing of these questions estimating θ, which quantifies the trade-off between living standards and lifespan. First, respondents were asked to imagine that today they contracted a painless disease that, left untreated, is expected to kill them in either 4, 10 or 20 years (they were randomly allocated throughout the survey to one of these values, which we denote by "D"). They were then asked how interested (either definitely interested, potentially interested, or not interested at all) they would be to take a drug, which has no side effects, and at no cost, to extend their life. This provided a baseline measure of respondents' willingness to extend their lifespan through taking a drug.

Second, respondents were then asked the same question, but informed that the drug would cost half of their current total household income for the rest of their life. This

The survey instrument explicitly told respondents that the "half income" terminology always means "half household income", in a frame they had to read before proceeding further.

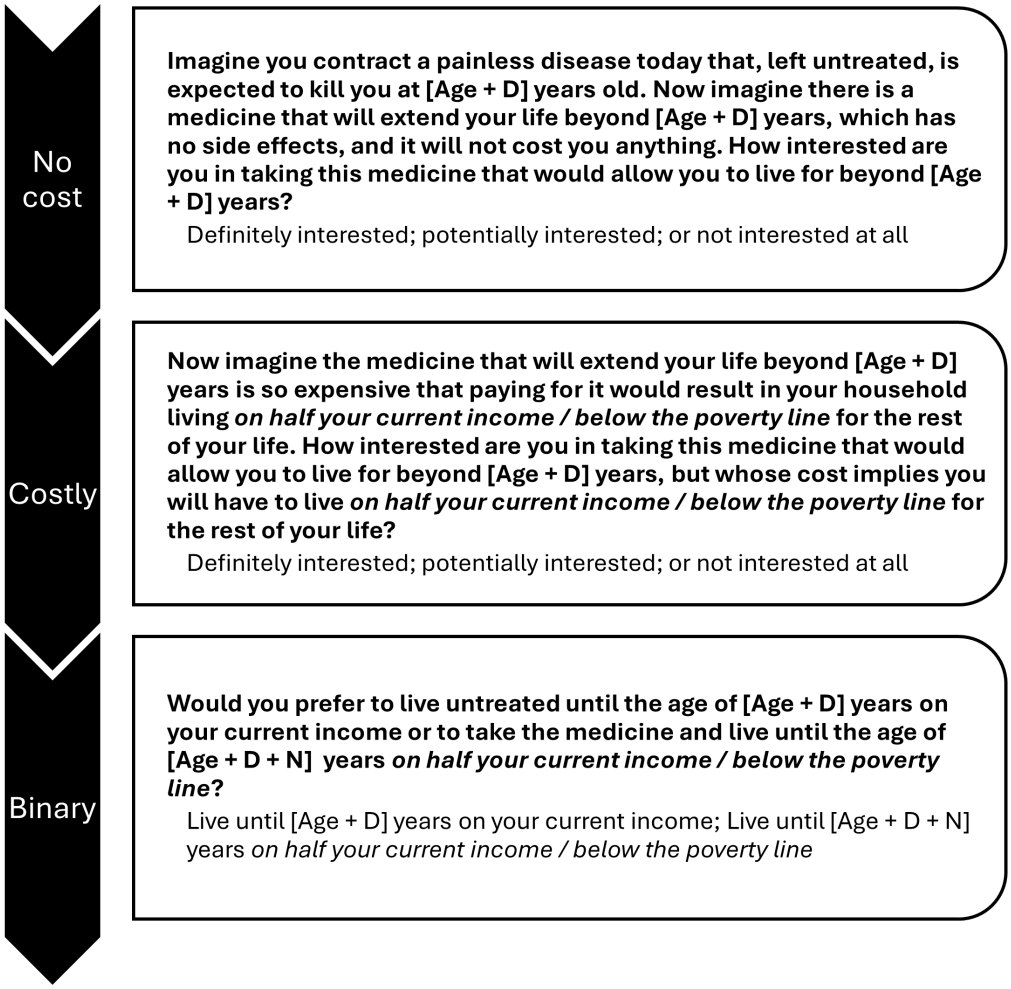
question provides an indication of respondents' willingness to forfeit some of their living standards in order to increase their lifespan. Respondents were then asked to describe briefly (in 25 words or fewer) why they selected the answer they did to this question. The open-ended qualitative answers provide important insights into respondents' underlying rationales for their decisions and serve as a helpful complement to the quantitative data analysis we primarily focus on.

Third, to precisely quantify the trade-off between living standards and lifespan, we ask three rounds of "binary" questions and randomly allocate respondents across different numbers of additional years of life that the costly drug could provide (which we denote by "N"). An illustration of the different pathways to which respondents were allocated is shown in Figure 4 below. In the first wave of the survey, respondents are randomly allocated in the first round to either 10 or 20 additional years from the costly drug. In the second and third rounds, respondents were randomly allocated across scenarios of either 5, 10, 20, or 40 additional years from the drug. In the second wave of the survey, respondents are randomly allocated in the first round to either 1, 2, 2.5, 5, 8, 16, 20, or 40 additional years from the costly drug. In the second and third rounds, respondents were randomly allocated across scenarios of either 1 or 40 additional years from the drug.

Respondents were then asked the same set of questions, but were informed that the cost of the drug is to live the rest of their lives in poverty. Specifically, they were informed that their total household income would fall below a value in local currency units, which was computed to correspond to the Societal Poverty Line for their country. The full survey instrument is in Appendix A.6.

There was only one round of randomization within the survey, in which respondents were randomly allocated across 16 distinct pathways (i.e., later-round scenarios were determined by the initial path assignment). This ensured that there was a roughly equal number of respondents allocated across each pathway, and on average, they shared similar characteristics. Additionally, the randomization was stratified (i.e., block randomization) by age and gender groups within each country to ensure that respondents were balanced across these characteristics. To assess balance across the 16 randomization pathways, we follow Kerwin et al. (2024) and implement a MANOVA test with randomization inference using the 18 control variables listed in Table 2. As randomization was conducted separately within each survey, we first absorb survey fixed effects. We find no evidence of imbalance (p-value = 0.29 pooling all surveys, and 0.33 and 0.26 for Waves 1 and 2, respectively).

Figure 3: Sequencing of questions capturing living standards and lifespan



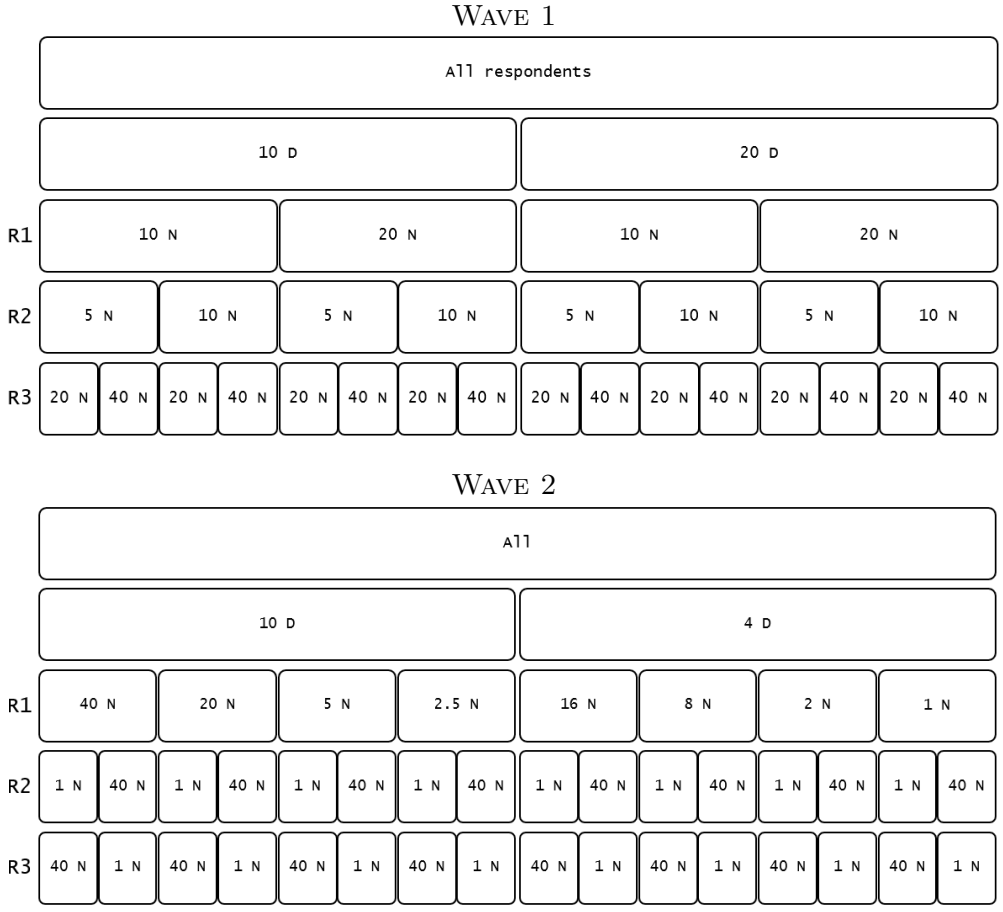
Note: This figure shows the exact wording and sequencing of the questions used to measure how people trade off living standards versus life span.

3.5 Constructing the cumulative distribution function

Our objective is to study the distribution of θ_i in the population. We do not aim to pin down an exact value of θ_i for each respondent. Given that each individual answers only three binary questions, any respondent-level estimate would be highly imprecise and, for our purposes, unnecessary. Instead, we directly recover the cumulative distribution function (CDF) of θ_i.

To construct the CDF of θ_i, we proceed as follows. First, we restrict the analysis to the relevant sample of respondents, for whom $\beta_i^{y_i} \approx \theta_i$ (see next section for details). For these individuals, each binary response reveals whether $\beta_i^{y_i}$ lies below or above the threshold value implied by the randomly assigned parameters. Specifically, when respondent i chooses the costly drug and thus reveals that $\beta_i^{y_i} < \hat{\beta}(\rho)$, they in fact reveal that $\theta_i < \hat{\theta}(\rho)$,

Figure 4: Illustration of the pathways that respondents were allocated to



Note: This figure shows the pathways that respondents were randomly allocated to and how the length of the lifespan remaining (D) and the additional number of years that the drug will provide them with (N) varied.

where $\hat{\theta}(\rho)$ denotes the threshold value implied by the randomly assigned parameters D and N. Conversely, declining treatment reveals that $\theta_i \geq \hat{\theta}(\rho)$. Thus, each answer identifies the interval in which $\theta_i \in [0, 1]$ lies, but not its exact value.

Second, we exploit the experimental variation in D and N, which generates different threshold values. In the absence of discounting, these thresholds are

$$\hat{\theta}(0) \in \hat{T} := \{0.091, 0.2, 0.33, 0.5, 0.66, 0.8, 0.91, 1\},$$

where the values $\hat{\theta}(0) \in \{0.091, 0.91\}$ are tested only in wave 2.[16] For each $\hat{\theta}(0) \in \hat{T}$, we compute the fraction of respondents who choose the drug when the parameters (D, N) correspond to that threshold. This fraction directly identifies the value of the CDF at $\hat{\theta}(0)$. The same procedure applies when assuming $\rho = 0.03$, replacing $\hat{\theta}(0)$ with $\hat{\theta}(0.03)$.

As in the VSL literature, the resulting CDF reveals substantial heterogeneity in θ_i. To summarize this heterogeneity, we follow the common practice in that literature and report both the mean and the median of the implied distribution. For the poverty-cost version, we denote these summary measures by $\theta^{x_P}_{mean}(\rho)$ and $\theta^{x_P}_{median}(\rho)$

3.6 Lower-bound estimates for θ from the "half-income cost" version

As discussed in Section 3.3 above, for the "half-income cost" version, there are two conditions under which the preference parameter tested ($\beta_i^{x_i/2}$) can be deemed informative for the respondent's type (θ_i).

Condition (i) is that the respondent would become poor in case her household income is halved. We therefore restrict the sample to respondents who report that halving their income would make them poor. In wave 2, respondents are asked whether they are "already poor or almost poor," or whether they would become poor if their income were divided by two, four, or eight (or more). This question allows us to identify the subsample for which condition (i) holds.

Condition (ii) is that the respondent's household earns the typical non-poor income in her society (x_{NP}). One difficulty here is that, even in relatively equal countries, the ratio $\frac{x_{NP}}{x_P}$ is typically larger than 2, often taking values around 3 or 4.[17] This implies that

[16] We attribute $\theta_i = 1$ to respondents (i) who state, in a follow-up question, that "life is not worth living" at the living standards y_i implied by taking the costly drug, and (ii) who never indicate willingness to take the drug when the cost is to live at y_i.

[17] The value of this ratio depends on both the income distribution considered and the poverty line (our paper uses the Societal Poverty Line (SPL) developed by Jolliffe and Prydz (2021)). Using the income distributions for the 122 most populous countries in 2019 from the World Bank's Poverty and Inequality Platform (PIP), the median value of the factor $\frac{x_{NP}}{x_P}$ is 2.6 when "typical" income among the poor and non-poor is defined by their *median*, and 3.4 when defined by their *mean*. In the median-income case, the first and third quartiles are 2.3 and 3.0, respectively; in the mean-income case, they are 3.0 and 4.1. Appendix Table A.1 reports the corresponding values for the seven countries in our sample. In virtually

respondents who satisfy condition (i) have an income that is lower than the typical income in their society (x_{NP}) and thus they violate condition (ii).[18] We use two alternative strategies to deal with this difficulty, but it is already worth emphasizing that both strategies yield *lower bounds* for θ.

The first strategy, which we call "**poverty factor 2**", is to estimate a lower bound estimate for θ by focusing on respondents who satisfy condition (i) that is, respondents who report that halving their income would make them poor. These respondents are expected to have a lower average income that x_{NP}, implying that $\beta_i^{x_i/2} < \theta_i$. We build the CDF of $\beta_i^{x_i/2}$ from the answers provided by these respondents to the half-income version and summarize this CDF using mean and median values, respectively denoted by $\beta_{mean}^{x_i/2}(\rho)$ and $\beta_{median}^{x_i/2}(\rho)$, following the procedure detailed in Section 3.5. These summary values (generically denoted by $\beta_{m.}^{x_i/2}(\rho)$) provide a lower bound estimate for θ.[19]

The second strategy, which we call "**poverty factor 4**", focuses on a different subset of individuals for whom condition (ii) more likely holds. We can more safely assume $x_i \approx x_{NP}$ for individuals who consider they would become poor if their income was divided by 4. The difficulty is that condition (i) does not hold for these individuals. As these individuals do not become poor when their income is halved. As $x_i \approx x_{NP}$ and $x_i/4 \approx x_P$, we have $x_i/2 > x_P$, which implies that $\beta_i^{x_i/2} < \theta_i$. Rather, for respondents for whom $x_i = x_{NP}$ and $x_i/4 = x_P$, we have

$$\beta_i^{x_i/4}|_{x_i=x_{NP},x_i/4=x_P} = \frac{u_i(x_i = x_{NP}) - u_i(x_i/4 = x_P)}{u_i(x_i = x_{NP}) - u_i(\dot{x})} = \theta_i \tag{11}$$

Our questionnaire did not include a "quarter-income cost" version of the main question. However, we can exploit the mathematical relationship that exists between $\beta_i^{x_i/4}$ and $\beta_i^{x_i/2}$, which captures the fact that "dividing income by four" corresponds to "dividing income by two" twice in a row. In Appendix A.1.2, we present this mathematical relationship and how we can use these respondents' answers to the "half-income cost" question to obtain a *lower bound* estimate for θ. In a nutshell, we can construct a CDF for a lower-bound for $\beta_i^{x_i/4}$, which we again summarize by taking mean and median values for this CDF, which we respectively denote by $\beta_{mean}^{x_i/4}(\rho)$ and $\beta_{median}^{x_i/4}(\rho)$. These summary values (generically denoted by $\beta_{m.}^{x_i/4}(\rho)$) should be considered as a lower bound estimate for θ.

all cases, the ratio exceeds 2 and rarely exceeds 5.

[18] To keep the "half-income cost" question simple and comparable across countries, we decided not to present respondents with a version of the cost for the drug corresponding to their country's ratio $\frac{x_{NP}}{x_P}$ (e.g., "the drug costs 70% of your income").

[19] As $\beta_i^{x_i/2} < \theta_i$, it can be that respondent i choses the costly drug, implying that $\beta_i^{x_i/2} < \hat{\beta}(\rho)$, but the (erroneous) assumption that $\beta_i^{x_i/2} \approx \theta_i$ would lead to the conclusion that $\theta_i < \hat{\beta}(\rho)$, while in fact it is possible that $\theta_i > \hat{\beta}(\rho)$. Poverty factor 2 estimates of $\beta_{m.}^{x_i/2}(\rho)$ are therefore lower bounds for θ.

4 Results

4.1 Main results

Estimates of θ (from poverty cost)

Our main strategy to estimate θ uses responses to the version of the binary question where the cost of taking the drug is *falling into poverty*. We first exploit the full sample of Waves 1 and 2, implicitly assuming that $x_i \approx x_{NP}$ for all respondents such that $\beta_i^{x_P} \approx \theta_i$. Most survey participants indeed belong to the non-poor segment of the income distribution in their respective countries, and this is the group of respondents whose answers are directly relevant for the definition of θ. We can thus estimate θ with $\theta^{x_P}_{mean}(\rho)$ and $\theta^{x_P}_{median}(\rho)$, as defined in Section 3.5. As shown below, we obtain similar results when focusing on subsets of participants with different levels of income.

Figure 6 reports the CDF that is, the share of respondents who chose to take the drug for each value of the implied threshold $\hat{\theta}(\rho)$. The figure distinguishes between Waves 1 and 2 and between the 0% and 3% yearly discount rates. The curves are increasing with $\hat{\theta}(\rho)$, reflecting that people are more willing to take the drug if the lifespan gain is greater. This is consistent with the natural monotonicity assumption.

For $\theta^{x_P}_{median}(\rho)$, we estimate *median* values of θ_i to be 0.87 (0% discounting) and 0.78 (3% discounting) using Wave 1 data; and 0.95 (0% discounting) and 0.92 (3% discounting) using Wave 2 data. The slightly lower values in Wave 1 reflect two features of that wave: (i) the range of θ_i implied by the question parameters was narrower, and (ii) Nigeria—where estimates are substantially lower—is included only in Wave 1. Across both waves, the estimated medians imply that respondents view approximately 1.05–1.28 poverty–years (PYs) as equivalent, in terms of well-being loss, to one year of life lost (YLL).

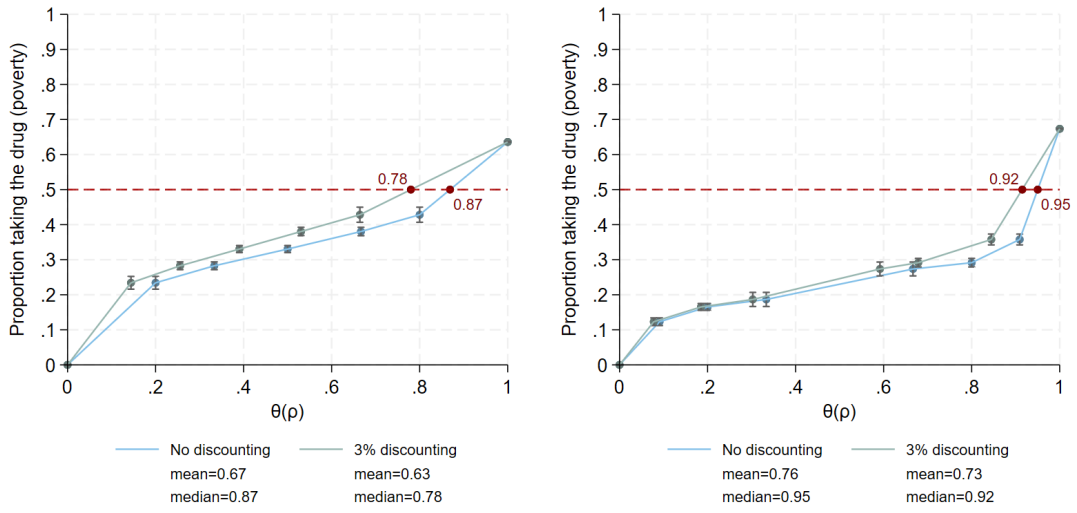
We also compute the *mean* value of θ_i as the area above the empirical CDF. The corresponding estimates are 0.67 and 0.63 for Wave 1, and 0.76 and 0.73 for Wave 2, respectively for 0% and 3% discounting.

Our main estimates for parameter θ are gathered in the Panel A of Table 1, distinguishing the different survey waves and different countries. From these estimates, we draw the following conclusions. First, and most importantly, all these estimates are larger than 0.5. This minimal value for θ is rather "high". Indeed, a minimal value of 0.5 for θ implies that 2 additional years spent in poverty are deemed to be *at least as bad as one year of life lost*. In other words, the welfare cost of a poverty-year is far from negligible compared to the welfare cost of a year of life lost. When facing a trade-off between lives and livelihoods, the answers from respondents reveal that they are not willing to increase their lifespans "whatever the costs".

Second, estimates for θ go as high as 0.97. As a result, we cannot exclude that the

welfare cost of a poverty-year is (virtually) equal to the welfare cost of a year of life lost. These results thus suggests a plausible range for θ to be $[0.5, 1]$.

Third, based on these results, we suggest the following two approaches to select a benchmark value for θ. One conservative approach consists in taking $\theta = 0.5$, i.e., the minimal value in our plausible range. The advantage of this conservative approach is that any conclusion emphasizing that poverty welfare costs are larger than mortality welfare costs would be robust to all plausible values of θ, as all alternative values further increase the weight given to poverty over mortality. An alternative approach is to take $\theta = 0.75$, i.e., the middle of the road value in our plausible range. This value is arguably more representative than 0.5 of the various values for θ in the Panel A of Table 1.



(a) Wave 1 **(b)** Wave 2

Figure 5: Cumulative distribution of θ_i in waves 1 and 2 (poverty cost)

Notes: This figure is based on survey questions in which the cost of the drug is living in poverty. It displays the share of respondents who choose to take the drug for the different values of $\hat{\theta}(\rho)$ that are reported on the x-axis. Panel (a) presents results from Wave 1; Panel (b) presents results from Wave 2.

Estimates of lower-bound for θ (from half-income cost)

We complement the estimates for θ obtained above by providing lower-bound estimates for θ obtained from the half-income cost question. We follow the "poverty factor 2" and "poverty factor 4" strategies described in Section 3.6. These strategies require that we focus on the subset of respondents for whom dividing income by 2 (resp. by 4) is approximately equivalent to falling into poverty.[20] This information was collected only in the second survey wave, where participants were explicitly asked by how much their income would need to fall for them to be classified as poor in their country. We thus restrict attention to the wave–2 sample and, within it, to the subset of respondents who

[20]For the poverty factor 2 strategy, we focus on respondents for whom $x_i/2 \approx x_P$. For the poverty factor 4 strategy, we focus on respondents for whom $x_i/4 \approx x_P$.

Table 1: Estimates of θ per country (Panel A). Lower-bound estimates of θ per country (Panel B and C)

		0% discounting		3% discounting	
	N	Median	Mean	Median	Mean
Panel A: Estimates of θ with $\theta_{m.}^{x_P}(\rho)$ (poverty cost)					
All observations (Waves 1 & 2)	46605	0.95	0.71	0.92	0.69
Wave 1	25287	0.87	0.67	0.78	0.63
Wave 2	21318	0.95	0.76	0.92	0.73
India	4437	0.88	0.69	0.80	0.65
Nigeria	5064	0.64	0.56	0.51	0.51
South Africa	4839	0.91	0.68	0.85	0.65
UK	5745	0.92	0.72	0.87	0.68
US (wave 1)	5202	0.89	0.70	0.81	0.66
US (wave 2)	11283	0.95	0.74	0.91	0.72
Colombia	5145	0.97	0.80	0.94	0.78
Indonesia	4890	0.95	0.75	0.91	0.72
Panel B: Lower-bound estimates of θ with $\beta_{m.}^{x_i/2}(\rho)$ (half-income cost)					
All observations (Wave 2 only)	6879	0.56	0.54	0.50	0.51
US (wave 2)	3600	0.60	0.58	0.54	0.54
Colombia	1659	0.67	0.56	0.59	0.53
Indonesia	1620	0.33	0.46	0.30	0.43
Panel C: Lower-bound estimates of θ with $\beta_{m.}^{x_i/4}(\rho)$ (half-income cost)					
All observations (Wave 2 only)	6258	0.55	0.57	0.51	0.54
US (wave 2)	3225	0.57	0.58	0.53	0.56
Colombia	1626	0.58	0.56	0.54	0.54
Indonesia	1407	0.49	0.53	0.45	0.51

Notes: Estimates of the parameter θ by survey wave, country, and method. Panel A reports estimates of $\theta_{m.}^{x_P}(\rho)$ from survey questions where taking the drug implies living in poverty. Panel B reports lower-bound estimates of θ provided by $\beta_{m.}^{x_i/2}$, which are based on the half-income cost questions, focused on respondents who report would be poor if their income was divided by 2. Panel C reports lower-bound estimates of θ provided by $\beta_{m.}^{x_i/4}$, which are based on the half-income cost questions, focused on respondents who report would be poor if their income was divided by 4. Columns report median and mean estimates under 0 percent and 3 percent discounting. Column N reports sample sizes.

reported that *dividing their income by 2 (resp. 4) would place them below the poverty line*. This group represents about 33% of the wave–2 sample, which explains why this approach is necessarily more indirect and has lower statistical power.

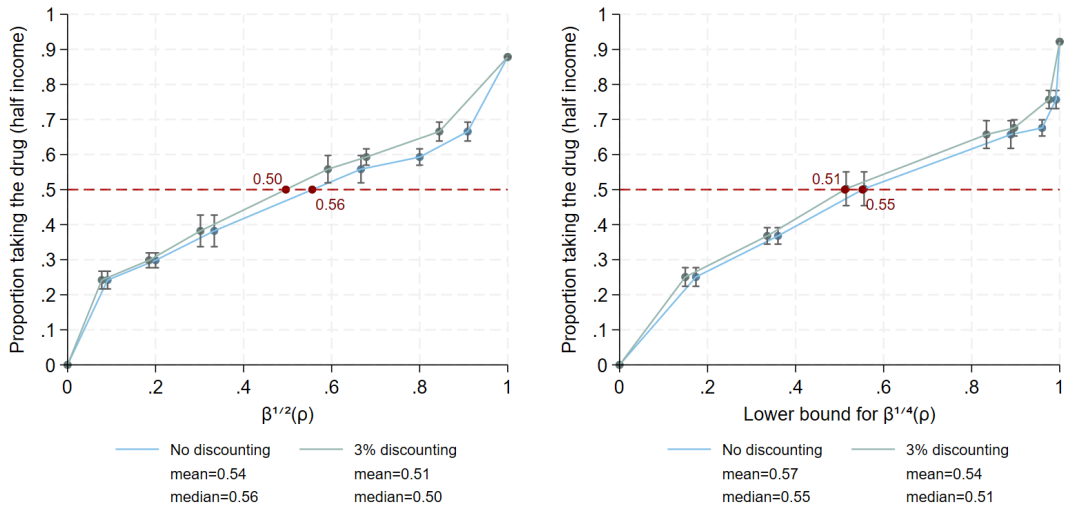
The CDFs for the "poverty factor 2" strategy are shown in Figure 6a. We estimate *median* values of $\beta_i^{x_i/2}$ are 0.56 (0% discounting) and 0.50 (3% discounting). We estimate *mean* values of $\beta_i^{x_i/2}$ are 0.54 and 0.51, respectively. These estimates imply that roughly 1.8–2.0 is an upper bound for the number of poverty-years (PYs) that respondents deem equivalent, in terms of well-being loss, to one year of life lost (YLL).

Despite the smaller sample, country-level estimates of $\beta_{mean}^{x_i/2}(\rho)$ are relatively stable (Table 1). Across the three countries included in wave 2 (United States, Colombia, and Indonesia), mean values range from approximately 0.43 to 0.58. As expected from the

theory, these lower-bounds are lower than the estimates for θ obtained from the poverty cost question. Country-level estimates of of $\beta^{x_i/2}_{median}(\rho)$ vary more, from 0.30 in Indonesia (3% discounting) to 0.67 in Colombia (0% discounting).

The CDFs for the "poverty factor 4" strategy are shown in Figure 6b. The estimated *median* values are 0.55 (0% discounting) and 0.51 (3% discounting). The *mean* values are 0.57 and 0.54, respectively. This shows that the lower-bound estimates for θ obtained from the poverty factor 4 strategy are very similar to the lower-bound estimates for θ obtained from the poverty factor 2 strategy.[21]

Overall, these lower-bound estimates provide additional confidence in the 0.5 minimal value for θ. Indeed, when using a different methodology, based on the half-income cost questions, we obtain lower-bounds for θ of the same magnitude. To be sure, some of these lower-bound values are smaller than 0.5, going as low as 0.3. Yet, recall they are lower-bound estimates, not estimates for θ. Out of the 76 estimates provided in Table 1, 70 are between 0.5 and 1. All values below 0.5 are lower-bound estimates.



(a) Poverty factor 2 **(b)** Poverty factor 4

Figure 6: Cumulative distribution of θ (half-income cost)

Notes: Figure (a) is based on survey questions where taking the drug halves household income. The sample is restricted to respondents who report that halving household income would place them below the poverty line. It displays the share of respondents who choose to take the drug for different threshold values $\hat{\beta}^{1/2}(\rho)$ (on x-axis), i.e., using the poverty factor 2 strategy. Figure (b) is based on survey questions where taking the drug halves household income. The sample is restricted to respondents who report that dividing household income by four would place them below the poverty line. It displays the share of respondents who choose to take the drug for different lower bound values for $\hat{\beta}^{1/4}(\rho)$ (on x-axis), i.e., using the poverty factor 4 strategy.

[21] To be sure, for a given individual i, we should have $\beta_i^{x_i/2} < \beta_i^{x_i/4}$. Yet, values for $\beta_{m.}^{x_i/4}(\rho)$ are very close to values for $\beta_{m.}^{x_i/2}(\rho)$. However, this is not a contradiction. Indeed, $\beta_{m.}^{x_i/4}(\rho)$ and $\beta_{m.}^{x_i/2}(\rho)$ are computed on different subsets of respondents. More importantly, $\beta^{x_i/4}_{median}(\rho)$ (resp. $\beta^{x_i/4}_{mean}(\rho)$) is by construction *a lower-bound* for the median (resp. mean) value for $\beta_i^{x_i/4}$. In constrast, $\beta^{x_i/2}_{median}(\rho)$ (resp. $\beta^{x_i/2}_{mean}(\rho)$) is an estimate for the median (resp. mean) value for $\beta_i^{x_i/2}$.

Robustness tests

This section presents a series of robustness tests for the estimates presented in the previous section. The results for the estimates of θ are summarized in Figure 7 and those for the lower-bound estimates of θ are summarized in Figures A.1 and A.2 for the poverty factor 2 and poverty factor 4 approaches, respectively. Throughout this section, we focus on estimates obtained under a 0% discount rate; estimates using a 3% rate are always slightly smaller, but remain very similar in magnitude and do not alter any of our conclusions.

We first examine how the estimates vary across major demographic subgroups. The estimates of θ (poverty cost) are extremely stable across all groups considered (Figure 7). Median estimates range narrowly from 0.943 to 0.962, and mean estimates from 0.676 to 0.747, with no demographic subgroup in the pooled sample exhibiting a meaningfully higher or lower valuation of the trade-off between poverty and longevity. For the lower-bound estimates of θ (half-income cost), the estimates vary somewhat more across subgroups, which is unsurprising given that this method relies on a smaller sample. With the poverty factor 2 approach, median estimates range from 0.451 to 0.75, and mean estimates from 0.475 to 0.6 across demographic groups (Figure A.1). Even in this case, however, the differences remain moderate. Although online survey participants tend to differ somewhat from the general population along socioeconomic and demographic lines, prior work suggests that responses in online surveys often approximate those obtained from in-person surveys reasonably well (Grewenig et al., 2023). Overall, this stability across demographic dimensions provides reassurance that our estimated values are not driven by composition effects and would likely remain similar in other samples or with other survey modes.

A second concern is that some respondents may have had difficulty imagining what it means to live on half their current income or to fall into poverty, potentially introducing noise into their answers. To assess this, we implemented an information treatment in the first survey wave. Approximately one third of respondents in India, Nigeria, South Africa, the United Kingdom, and the United States were randomly assigned to view illustrative images sourced from Dollar Street, a platform documenting how households live at different income levels in many countries. For the "half-income" questions, treated respondents were provided with two images of houses in their country, and they were informed that the household living in the poorer house lived on half the income of the household living in the richer house (see Figures A.3 to A.7 in the Appendix).[22] For the "poverty" questions, treated respondents were shown an image of a household living below the Societal Poverty Line in their country. Figure 7 compares estimates of θ between the treatment and control groups.[23] The results are very similar across both groups,

[22]To test respondents' understanding, at the end of the survey instrument, respondents not treated were asked which of the two household is poorer. The vast majority correctly identified it.

[23]This comparison cannot be made for the indirect approach, which relies on wave 2 where the treat-

indicating that providing concrete visual information about living standards does not meaningfully affect respondents' choices and that lack of comprehension about income losses is unlikely to bias our estimates.

Another set of robustness tests examines how the estimates change when adding or excluding observations or questions that may be less internally consistent. We implement four variations. First, each survey module included three "poverty" and three "half-income" questions. If survey fatigue plays a role, answers to the first question in each module should be the most reliable. Restricting the analysis to these first questions yields estimates of θ that are nearly identical to the benchmark results. Second, we refine this restriction by excluding participants whose parameters (D, N) in the first question imply an age at death $D + N$ exceeding the respondent's own reported expected age at death.[24] Results again remain very similar. The third and fourth variations relate to transitivity in respondents' choices. Our benchmark analysis excludes respondents who violate transitivity within the set of questions used to estimate θ.[25] The survey was specifically designed to detect intransitive choices: if a respondent rejected the drug for a larger value of N but accepted it for a smaller value of N, their answers would be logically inconsistent. To assess the impact of these exclusions, we conduct two robustness checks. First, we retain all observations, including those that violate transitivity. Second, we take the opposite approach and exclude respondents who provide any inconsistent answer in any part of the questionnaire. In both cases, the resulting estimates of θ are very similar to the benchmark, confirming that our results are not driven by the handling of inconsistent responses.

Finally, because our sample is on average more educated than the general population in the surveyed countries, we reweight the data to align educational levels with national population distributions. This adjustment has little effect on our main estimates (see Table A.6).

3d person's view

A natural question is whether respondents' answers would differ if they faced the same trade-off on behalf of someone else rather than for themselves. In other words, personal preferences over the trade-off between poverty and longevity may not coincide with *societal* preferences. The second wave of the survey included two questions designed to probe this distinction.

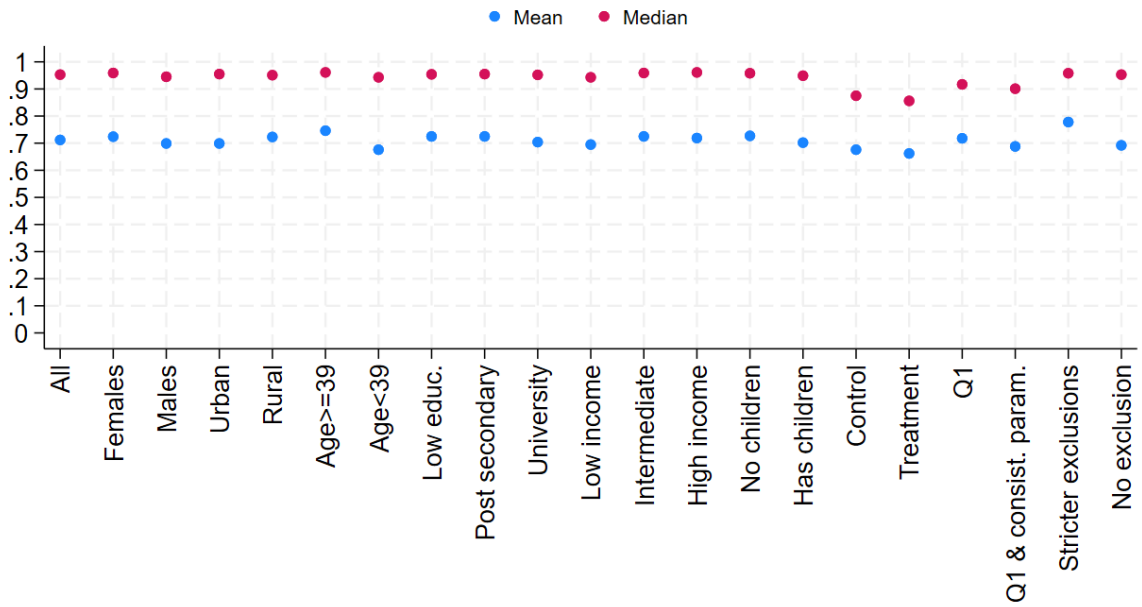
The first question asked respondents to consider the preferences of a representative

ment was not used.

[24] This robustness test uses only the first question because the second and third questions were deliberately designed with extreme values of N to test internal consistency, and these values often imply lifespans exceeding respondents' expected age at death.

[25] We also exclude respondents who decline to take the drug even when it is costless, as such answers are unlikely to reflect meaningful variation in preferences and would introduce noise.

Figure 7: Robustness estimates of θ (poverty cost)



Notes: This figure reports robustness estimates of the parameter θ obtained using the direct method based on survey questions in which taking the drug implies living in poverty. Estimates are shown for different subsamples, as well as for alternative specifications and sample restrictions. All estimates are computed under a 0 percent discount rate.

person in their country:

> *If they had a choice, which of the following two lives do you think people in your country would choose for themselves?*
>
> *1. Living their whole life in poverty and dying at 75 years old.*
>
> *2. Living their whole life free from poverty and dying at 50 years old.*

A comparison between 75 poverty-years and 50 poverty-free years implies a threshold value $\hat{\theta}(0)$ of 1/3. We find that 33% of respondents think most people would prefer living in poverty until age 75, while 67% believe they would prefer living free from poverty until age 50. This suggests that a large majority assigns a societal θ above 1/3.

Observe that this question is robust to the difference that frequently appears between the "willingness to pay" (buying a good) and the "willingness to accept" (selling a good) in survey data (Horowitz and McConnell, 2002).[26] Indeed, this question compares two "complete" human lives from a third-person perspective.

Respondents were also asked:

[26] Our main questions are framed so as to elicit the willingness-to-pay to increase one's lifespan, via the purchase of a costly drug that increases lifespan.

Think of another person whose life is similar to yours. This person has the same age, lives in a similar family and has the same income as you. Assume this person contracts a painless disease that, if untreated, would kill this person in 10 years. Assume the person could buy a medicine that would delay her death by 5 years, but this medicine is so expensive that the person would spend the rest of her life in poverty. What do you think this person would choose?

1. I think this person would prefer to live untreated for 10 years under this person's current income.

2. I think this person would buy the medicine to live for 15 years in poverty.

In this question, the implied threshold value $\hat{\theta}(0)$ is also $5/(10+5) = 1/3$ (with a 0% discount rate). We find that 69% of respondents believe the other person would prefer to live 10 additional years under current income, while 31% believe the person would take the medicine and live 15 years in poverty. This implies that, for a large majority of respondents, the *societal* value of θ exceeds 1/3, consistent with a relatively low willingness to accept poverty in exchange for longer life when judging for others.

Responses to both questions are quite consistent across countries. They show that respondents' beliefs about *societal* preferences are broadly consistent with the values of θ we estimate from *personal* decisions, which are (much) above 1/3.

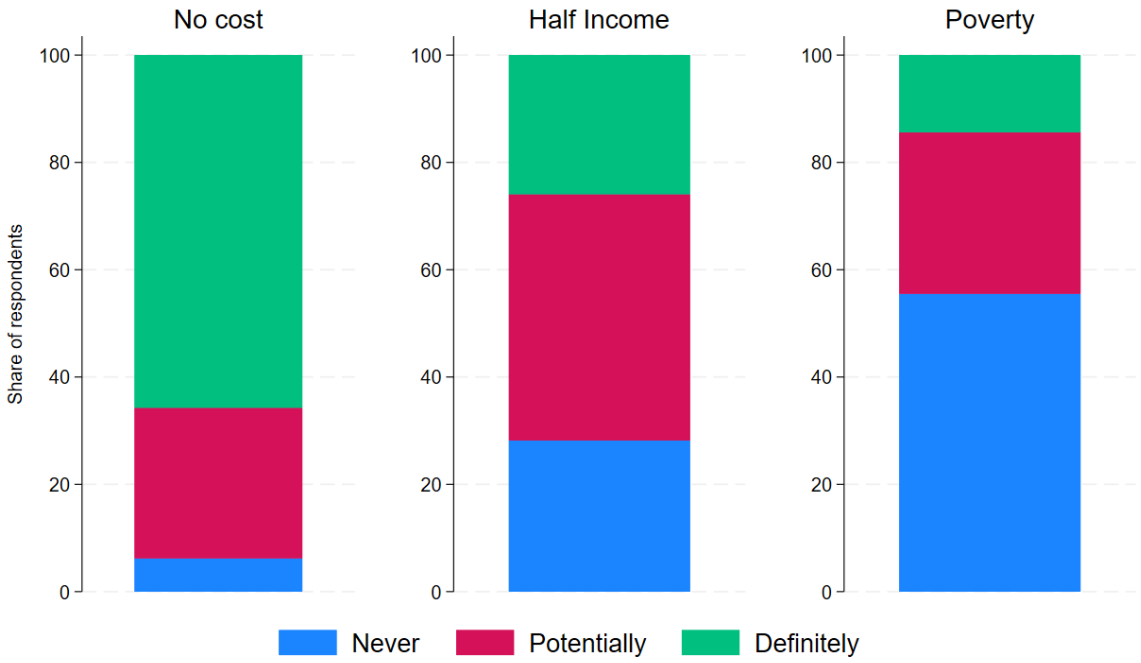
4.2 Additional Analysis

We conduct a series of additional analyses to further illustrate the credibility of respondent's answers, and thus of our main findings.

4.2.1 Interest in taking costless vs costly drug to extend lifespan

Over 90 percent of respondents across countries were definitely or potentially interested in taking a drug to extend their lifespan at no cost, but interest wanes considerably if the cost of the drug is half of their current income or living below the Societal Poverty Line. Figure 8 shows the aggregate cross-country results for the share of respondents definitely interested, potentially interested, or not interested at all in a drug that would extend their lifespan when the drug had no cost, cost half of their income, or the cost would mean they have to live below the Societal Poverty Line for the rest of their lives. A majority of respondents change their answer when the drug is presented as costly rather than free. The share that were not interested at all rises from 8 percent to 27 percent when the drug costs half of their current income, to 53 percent when respondents are pushed into poverty, while the share that are definitely interested falls from 65 percent to 26 percent, then to 16 percent respectively.

Figure 8: Interest in taking costless and costly drug to extend lifespan



Notes: This figure shows the share of respondents that are definitely, potentially, or never interested in taking a drug that would extend their lifespan if it had no cost, would cost half of their current income, or result in them living below the Societal Poverty Line. For the rest of the analysis, we exclude the small share of respondents who are not interested at all when there is no cost.

4.2.2 Elasticity of interest in taking a costly drug to extend lifespan

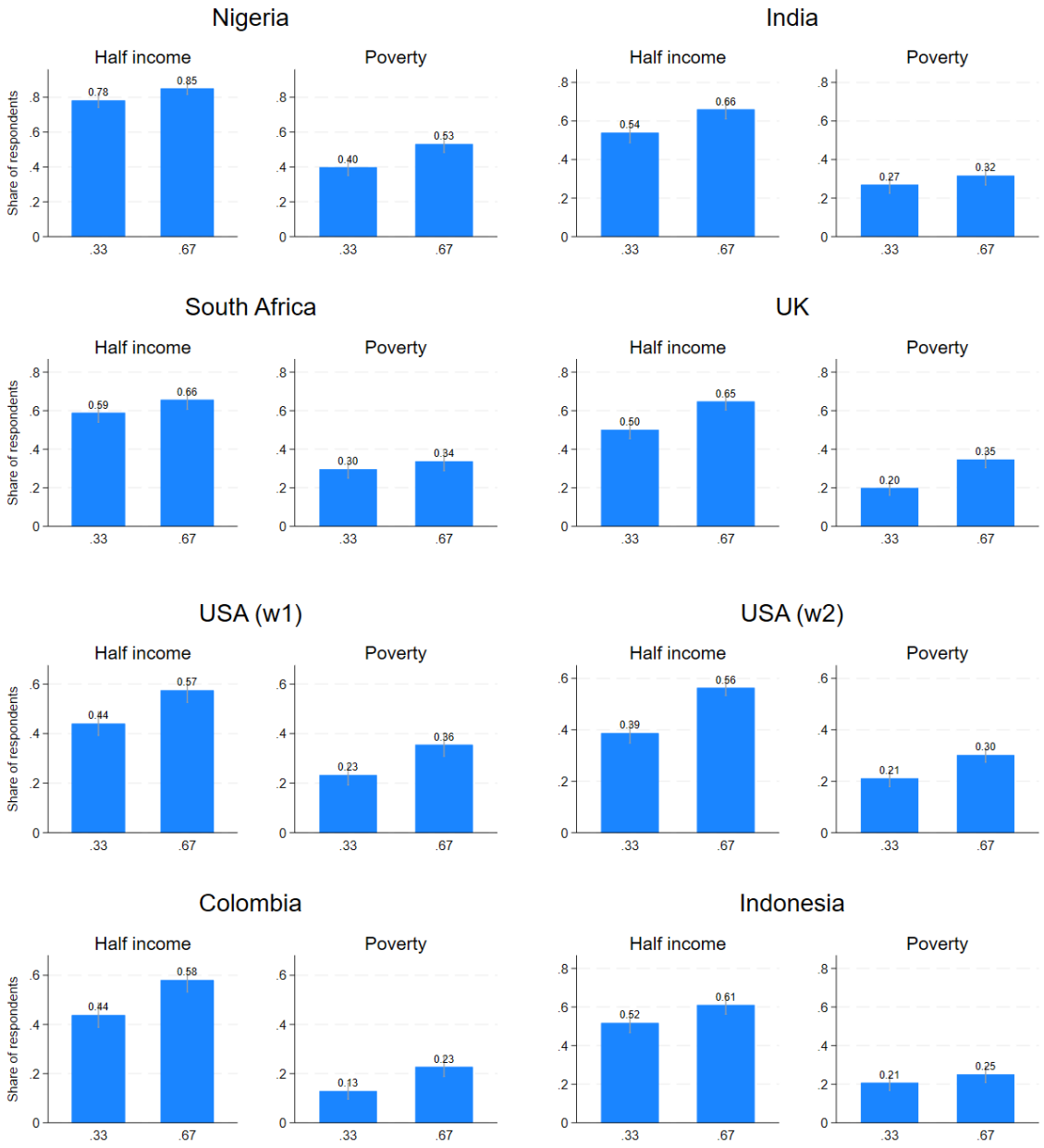
Interest in taking the costly drug responds strongly to the implied threshold value $\hat{\beta}(\rho)$ and to the type of cost considered. Respondents are substantially more likely to accept the drug when $\hat{\beta}(\rho)$ is higher that is, when they have fewer remaining years D or when they gain more years N. They are also more likely to take the drug when the cost is framed as halving income rather than falling into poverty.

Figure 9 illustrates this pattern using the first-round binary questions, where $\hat{\beta}(0)$ equals either 0.33 or 0.66. Across all countries, increasing $\hat{\beta}(0)$ from 0.33 to 0.66 raises the share of respondents willing to take the drug by roughly 15 percentage points under the half-income scenario, and by 10 percentage points under the poverty-cost scenario.

Levels differ across countries, but the comparative statics are remarkably consistent. Under the half-income cost, interest ranges from 39–78 percent when $\hat{\beta}(0) = 0.33$, and from 56–85 percent when $\hat{\beta}(0) = 0.66$. Under the poverty-cost scenario, the corresponding ranges are 13–40 percent and 23–53 percent.

In every country, the increase in willingness to take the drug is statistically significant both when $\hat{\beta}(0)$ rises (holding the cost constant) and when the cost is reduced from poverty to half income (holding $\hat{\beta}(0)$ constant).

Figure 9: Elasticity of interest in taking a costly drug to extend lifespan



Notes: This figure shows how the share of respondents interested in taking the drug to extend lifespan varies depending on the threshold value $\hat{\beta}(0)$ of the scenario they were allocated to in the first round of binary questions and the loss in living standards they would experience. The analysis excludes respondents with inconsistent answers in the relevant survey module and respondents who do not want the drug even if costless.

4.2.3 Regression analysis

Another way to assess whether participants' answers are credible is to examine how they correlate with question parameters and basic sociodemographic variables. If the estimated correlations align with theoretical predictions, this provides suggestive evidence that responses are meaningful rather than arbitrary.

In Tables 2 and 3, we present regression analyses of the determinants of participants' willingness to take the costly drug. The main analysis uses OLS regressions, but we obtain similar results with logit regressions (Appendix Tables A.7 and A.8). In Table 2, the cost is defined as falling into poverty. Each regression draws on more than 40,000 individual decisions, with standard errors clustered at the respondent level. In Table 3, the cost of the drug is defined as halving household income, and we distinguish regressions with the full sample, from regressions with the subset of respondents from Wave 2 who reported that their income needs to be halved to fall into poverty.

We restrict attention to variables for which theory provides clear directional predictions. This allows us to assess whether participants' answers are internally consistent with established theoretical priors.[27]

Theory predicts that willingness to take the drug should increase when the untreated lifespan with the disease (D) is shorter, and when the health benefit of the drug in terms of additional years of life (N) is larger. The regression results in Tables 2 and 3 confirm these predictions: the regression coefficients of D and N in Columns (1) are highly significant and quantitatively strong, indicating that respondents are highly sensitive to the parameters of the hypothetical scenarios.

Moreover, our theoretical model in Section 2 predicts a specific functional form for how D and N influence decisions, via the parameter $\hat{\beta}(\rho)$, which captures threshold values for the fraction of period utility lost when paying for the costly drug. The regression results support this prediction. In Column (2) of Tables 2 and 3, the coefficient of $\hat{\beta}(0)$ is positive and highly significant. Once $\hat{\beta}(0)$ is included together with D and N, as in Column (3) of each table, it absorbs most of the explanatory power of D and N: the coefficients on D and N decline in magnitude and in some cases even flip sign. In all cases, their statistical significance sharply declines. This pattern suggests that $\hat{\beta}(0)$ is the key parameter driving respondents' decisions, with D and N capturing only second-order effects when the three parameters are considered jointly.

Respondent characteristics also influence decision-making in predictable ways. Consistent with expectations, respondents who expect to live longer, who believe people should live longer, or who report more positive attitudes toward life are significantly more likely to choose the drug.[28]

[27] For some respondent characteristics such as gender, marital status, household composition, or education, there are no clear theoretical predictions regarding the sign of their correlation with drug-taking decisions. We therefore refrain from interpreting the coefficients on these variables, although they are included in the regressions.

[28] Older individuals are less willing to take the drug, holding other factors constant. Recall here that our questions confront younger and older individuals with *equal* residual lifespans (parameters D and N), which contrasts with the VSL literature where decisions usually involve decisions about individuals' own expected residual lifespan. Another difference is that our questions consider substantial income changes, not marginal ones. As discussed below in the analysis of qualitative responses in Section 4.2.4, this pattern is consistent with older individuals placing relatively greater weight on quality of life than on quantity (longevity), compared to younger individuals (Figure 11).

The relationship between drug-taking decisions and income depends on how the cost of the drug is defined. When the cost is defined as falling into poverty, the burden is larger for richer individuals, making them unambiguously less likely to take the drug. By contrast, when the cost is a 50% reduction in income, richer respondents might be more willing to take the drug, since their residual income after the cut remains relatively high. The data confirm both predictions. Using both absolute income (measured in six household income brackets) and relative income (measured by reported quintiles of the income distribution), we find that higher-income respondents are less willing to take the drug when the cost is entering poverty. We also find some evidence in the full sample that richer respondents are more willing to take the drug when the cost is halving one's income.[29]

These patterns reinforce the view that responses are coherent and systematically related to both theoretical parameters and individual characteristics.

4.2.4 Qualitative responses

We utilize the qualitative answers people provide to assess their understanding of the questions regarding the trade-off between living standards and lifespan, and to shed further light on the rationale for their choices (drawing on best practices in Haaland et al. 2025). Specifically, respondents are asked to explain their level of interest (either definitely interested, potentially interested, or not interested at all) in taking a drug that would extend their lifespan, but at the cost of them having to live the rest of their life on half their income. These qualitative answers were categorized into reasons for taking and not taking the drug, and two main types of analysis were conducted.

First, we conducted frequency analysis of these answers to identify what motivated people's choices (e.g., if they stated they had a belief in the afterlife, were they consequently less concerned about having a long lifespan?). To visualize the frequency of main keywords, we present a word cloud in Figure 10, where the relative size of each keyword reflects its frequency in the qualitative answers. Keywords justifying interest in the drug are displayed in green, those explaining disinterest in orange, and indecision-related responses in blue. The results show that most people provided qualitative answers that were consistent with their previous response to the closed question. The most common keywords provided by respondents who were interested in the drug were related to "Life Over Money", "Live Long (time)", "Want To Live", and "(prefer to) Live More". In contrast, the most common keywords provided by respondents who were not interested in the drug were related to "Income Not Enough", "Impacts Family", "Half Income Difficult", and "Life Quality Suffer".

[29] In Columns (4) to (6) of Tables 2 and 3, the relationship with income is not statistically significant, which is explained by the fact that this regression focuses on respondents who stated that their incomes should be halved to fall into poverty.

Table 2: Predictors of willingness to take drug, OLS regressions (poverty cost)

	Take drug dummy		
	(1)	(2)	(3)
D (Years remaining without drug)	-0.00847***		-0.00323***
	(0.000795)		(0.000906)
N (Extra years thanks to the drug)	0.00403***		-0.00112**
	(0.000125)		(0.000445)
$\hat{\beta}(0)$		0.264***	0.308***
		(0.00720)	(0.0245)
Question round	-0.00912***	0.00356***	0.00830***
	(0.00128)	(0.00107)	(0.00196)
Age	-0.00417***	-0.00418***	-0.00418***
	(0.000279)	(0.000279)	(0.000279)
Female	-0.0314***	-0.0312***	-0.0315***
	(0.00651)	(0.00651)	(0.00651)
HH size	-0.00814***	-0.00830***	-0.00828***
	(0.00262)	(0.00262)	(0.00262)
Children	0.0258***	0.0257***	0.0257***
	(0.00335)	(0.00335)	(0.00335)
Partnership	0.00594	0.00562	0.00577
	(0.0110)	(0.0111)	(0.0110)
Married	-0.00986	-0.0103	-0.00975
	(0.00931)	(0.00932)	(0.00931)
Divorced	0.00155	0.00156	0.00197
	(0.0149)	(0.0149)	(0.0149)
Widowed	0.0176	0.0163	0.0169
	(0.0240)	(0.0240)	(0.0239)
Positive about life	0.00936***	0.00937***	0.00938***
	(0.00201)	(0.00201)	(0.00201)
Belief in afterlife	0.00915***	0.00914***	0.00914***
	(0.00247)	(0.00247)	(0.00246)
Age too young to die	0.000614***	0.000627***	0.000617***
	(0.000163)	(0.000163)	(0.000163)
Death age (expected)	0.00439***	0.00438***	0.00440***
	(0.000270)	(0.000269)	(0.000269)
Income cat.	-0.0155***	-0.0158***	-0.0156***
	(0.00244)	(0.00244)	(0.00243)
Relative wealth (quintile)	-0.0239***	-0.0237***	-0.0239***
	(0.00605)	(0.00605)	(0.00604)
Primary school	-0.0582	-0.0619	-0.0617
	(0.0685)	(0.0682)	(0.0682)
Secondary school	-0.106	-0.110*	-0.110*
	(0.0651)	(0.0648)	(0.0648)
Post secondary	-0.0945	-0.0978	-0.0979
	(0.0649)	(0.0645)	(0.0645)
University	-0.0833	-0.0868	-0.0868
	(0.0649)	(0.0645)	(0.0645)
Observations	46599	46599	46599
R^2	0.080	0.081	0.083

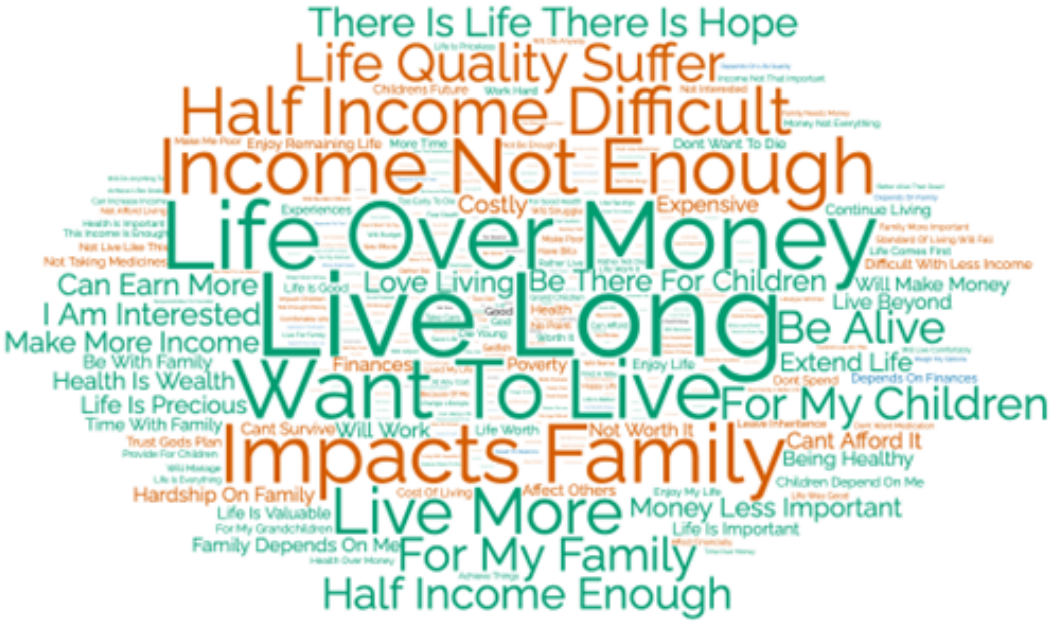
Data source: survey data. Survey fixed effects and question number fixed effects are included in all regressions. Significance levels are indicated by * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: Predictors of willingness to take drug, OLS regressions (half-income cost)

	Take drug dummy					
	All observation			Poverty factor 2 (Wave 2)		
	(1)	(2)	(3)	(4)	(5)	(6)
D (Years remaining without drug)	-0.0104***		0.000984	-0.0105***		0.00166
	(0.000785)		(0.000910)	(0.00262)		(0.00294)
N (Extra years thanks to the drug)	0.00783***		-0.00340***	0.00912***		-0.000677
	(0.000143)		(0.000460)	(0.000277)		(0.00115)
$\hat{\beta}(0)$		0.494***	0.670***		0.509***	0.545***
		(0.00810)	(0.0262)		(0.0153)	(0.0643)
Question round	-0.0359***	-0.0109***	0.00169	-0.0504***	-0.0111***	-0.00817
	(0.00159)	(0.00134)	(0.00217)	(0.00440)	(0.00406)	(0.00669)
Age	-0.00781***	-0.00781***	-0.00782***	-0.00784***	-0.00787***	-0.00787***
	(0.000289)	(0.000289)	(0.000289)	(0.000634)	(0.000633)	(0.000633)
Female	-0.0236***	-0.0238***	-0.0241***	-0.0213	-0.0210	-0.0210
	(0.00657)	(0.00655)	(0.00655)	(0.0161)	(0.0161)	(0.0161)
HH size	-0.00222	-0.00250	-0.00257	-0.00892	-0.00913	-0.00914
	(0.00258)	(0.00258)	(0.00258)	(0.00667)	(0.00668)	(0.00668)
Children	0.0256***	0.0256***	0.0256***	0.0237***	0.0235***	0.0234***
	(0.00344)	(0.00343)	(0.00343)	(0.00844)	(0.00840)	(0.00841)
Partnership	-0.00569	-0.00593	-0.00601	0.00979	0.0109	0.0109
	(0.0111)	(0.0111)	(0.0110)	(0.0257)	(0.0256)	(0.0256)
Married	0.00172	0.00138	0.00177	0.00944	0.0101	0.0101
	(0.00924)	(0.00922)	(0.00921)	(0.0233)	(0.0232)	(0.0232)
Divorced	0.0257	0.0259	0.0262	0.0176	0.0210	0.0214
	(0.0161)	(0.0160)	(0.0160)	(0.0354)	(0.0354)	(0.0354)
Widowed	0.0309	0.0299	0.0304	0.00812	0.00915	0.00901
	(0.0262)	(0.0261)	(0.0260)	(0.0652)	(0.0646)	(0.0645)
Positive about life	0.0178***	0.0179***	0.0179***	0.0202***	0.0200***	0.0201***
	(0.00209)	(0.00209)	(0.00209)	(0.00419)	(0.00418)	(0.00418)
Belief in afterlife	0.00313	0.00313	0.00316	0.00880	0.00900	0.00897
	(0.00253)	(0.00253)	(0.00252)	(0.00626)	(0.00622)	(0.00622)
Age too young to die	0.000668***	0.000679***	0.000675***	0.0000412	0.0000596	0.0000613
	(0.000157)	(0.000156)	(0.000156)	(0.000372)	(0.000371)	(0.000372)
Death age (expected)	0.00632***	0.00631***	0.00632***	0.00630***	0.00635***	0.00635***
	(0.000268)	(0.000267)	(0.000267)	(0.000695)	(0.000691)	(0.000691)
Income cat.	0.00572**	0.00547**	0.00549**	0.00591	0.00590	0.00584
	(0.00243)	(0.00243)	(0.00242)	(0.00623)	(0.00622)	(0.00621)
Relative wealth (quintile)	0.0409***	0.0410***	0.0409***	-0.00606	-0.00618	-0.00628
	(0.00565)	(0.00564)	(0.00564)	(0.0165)	(0.0165)	(0.0165)
Primary school	-0.0542	-0.0594	-0.0600	-0.0761	-0.0877	-0.0877
	(0.0710)	(0.0707)	(0.0709)	(0.154)	(0.154)	(0.154)
Secondary school	-0.0971	-0.101	-0.102	-0.00791	-0.0192	-0.0194
	(0.0677)	(0.0674)	(0.0676)	(0.150)	(0.150)	(0.151)
Post secondary	-0.0849	-0.0893	-0.0902	-0.0147	-0.0267	-0.0269
	(0.0674)	(0.0672)	(0.0674)	(0.149)	(0.150)	(0.150)
University	-0.0613	-0.0659	-0.0667	0.00500	-0.00885	-0.00925
	(0.0674)	(0.0671)	(0.0673)	(0.149)	(0.150)	(0.150)
Observations	45354	45354	45354	6876	6876	6876
R^2	0.181	0.190	0.191	0.188	0.196	0.196

Data source: survey data. Survey fixed effects and question number fixed effects are included in all regressions. Significance levels are indicated by * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Figure 10: Qualitative response associated with interest in taking medicine



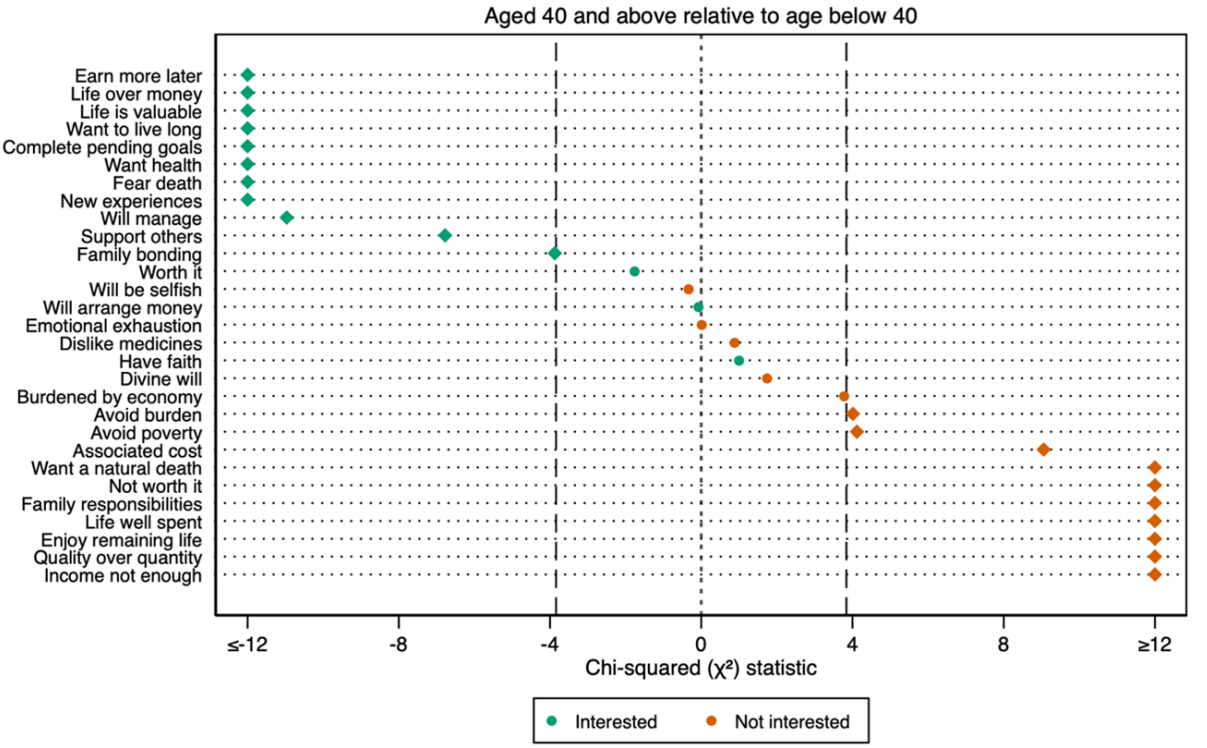
Notes: This figure shows that most people provided qualitative answers that were consistent with their previous response to the closed question. Keywords justifying interest in the drug are displayed in green, those explaining disinterest in orange, and indecision-related responses in blue.

Second, we conducted keyness analysis to test the relative frequencies (using chi-squared statistics) of keywords across subgroups of respondents (e.g., based on their age) to examine how different types of people's motivations varied. A positive test statistic indicates that the theme is more frequent in the target group, while a negative statistic indicates higher frequency in the reference group. This type of analysis provides a valuable complement to the regression analysis (presented in Subsection 4.2.3). For example, the regression analysis shows that age is negatively related to interest in taking the costly drug, and the keyness analysis in Figure 11 helps to illustrate why. Younger respondents are more likely to cite aspirational answers like "Earn more later",[30] "Life over money", "Life is valuable", "Want to live long", and "Complete pending goals", when justifying interest in the drug, reflecting a focus on long-term planning, valuing life, and fulfilling goals. Older respondents appear to be more risk-averse and are more likely to suggest financial concerns, such as "Income not enough", "Avoid poverty", and "Quality over quantity", indicating a stronger emphasis on immediate financial constraints as their

[30]The "Earn more later" terminology, selected by the consultant who completed the keyness analysis, mostly reflects "Work more later" answers, where respondents indicate they would react to lower income when taking the drug by increasing labor supply, i.e., by reducing leisure time. If this labor supply reaction eases the period utility loss coming from the income losses, then it implies that respondents who consider the possibility for labor supply adjustment are more willing to take the costly drug (than what they would be without labor supply adjustments), and thus their answers understate their own θ_i, i.e., our estimates for θ are lower, making our plausible range more conservative.

justification for not being interested in the medicine.

Figure 11: Differences in frequency of qualitative responses between younger and older respondents



Notes: This figure shows the relative frequency of keywords between younger and older respondents, where a positive test statistic indicates that the keyword is more frequent in the older group, while a negative statistic indicates higher frequency in the younger group.

The Appendix provides detailed information about the methodology used in analyzing the qualitative answers and presents keyness analysis results for different definitions of the respondents subgroups, e.g., parental status, gender, belief in afterlife, etc (see Figures A.8 to A.19).

5 Applications

Our survey results narrow the plausible range of values for θ, showing that it lies above 0.5. In this section, we illustrate implications for welfare analysis through three applications: long-run global trends in poverty and mortality, the effects of the COVID-19 pandemic, and energy subsidies.

Our empirically grounded value of θ allows us to show how poverty and mortality outcomes jointly shape welfare assessments for these questions, and how their relative

sizes varies over time or across contexts. The three applications show that both poverty and mortality outcomes make meaningful contributions to changes in well-being and should be accounted for in related policy analysis.

5.1 Progress on global poverty and mortality

First, we study at the global level how reductions in mortality and reductions in poverty have jointly contributed to improvements in well-being over the last decades. Figure 12 shows global trends in life expectancy and poverty between 1980 and 2023. There has been significant progress on both fronts, with life expectancy rising from 63 to 73 years and the Societal Poverty rate decreasing from 54 to 24 percent over the period.

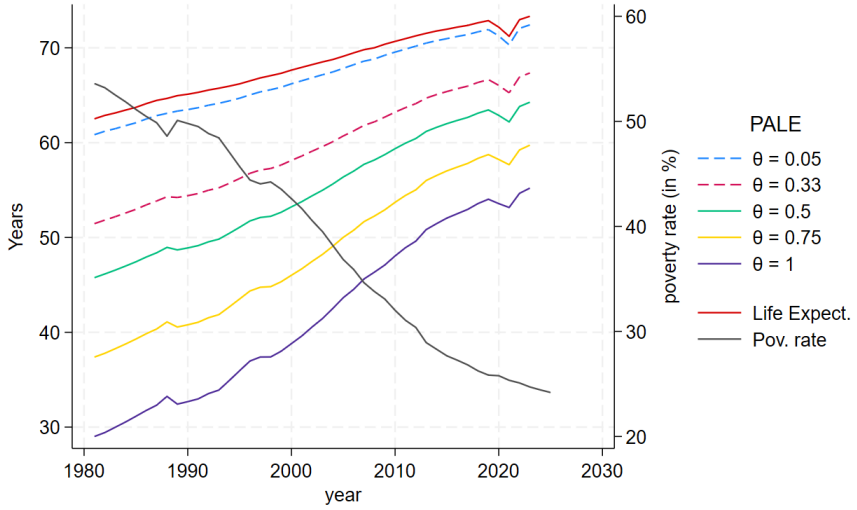


Figure 12: Global life Expectancy, PALE, and poverty rates.
Data source: Life expectancy at birth is from the UN Population Division (World Population Prospects), accessed via the World Bank Data Catalog. The societal poverty rate is from the World Bank's Poverty and Inequality Platform (PIP).

We study both dimensions jointly using the PALE framework defined in Equation (4). Global trends for PALE for different values of θ are also reported on Figure 12. Conceptually, PALE is a poverty-adjusted measure of life expectancy: life expectancy is rescaled as a function of poverty. The magnitude of this rescaling depends on θ. When θ is small, poverty receives little weight and PALE closely tracks life expectancy. For the extreme value $\theta = 0$, poverty receives a zero weight and the progress against poverty is irrelevant when compared to the progress against mortality.

Our estimates suggest that θ should take a value of at least 0.5. For such values, both mortality reduction and poverty reduction make substantial contributions to improvements in PALE over the 1980–2020 period. Figure 13 shows the share of the increase in PALE attributable to gains in life expectancy.

When $\theta \geq 0.5$, this share is generally below 50 percent in recent decades, implying that poverty reduction accounts for the majority of welfare improvements. While mortality

gains were an important driver of progress throughout the period, the contribution of poverty reduction has grown over time. In the most recent years, more than two-thirds of overall improvements in PALE are driven by poverty reduction for plausible values of θ.

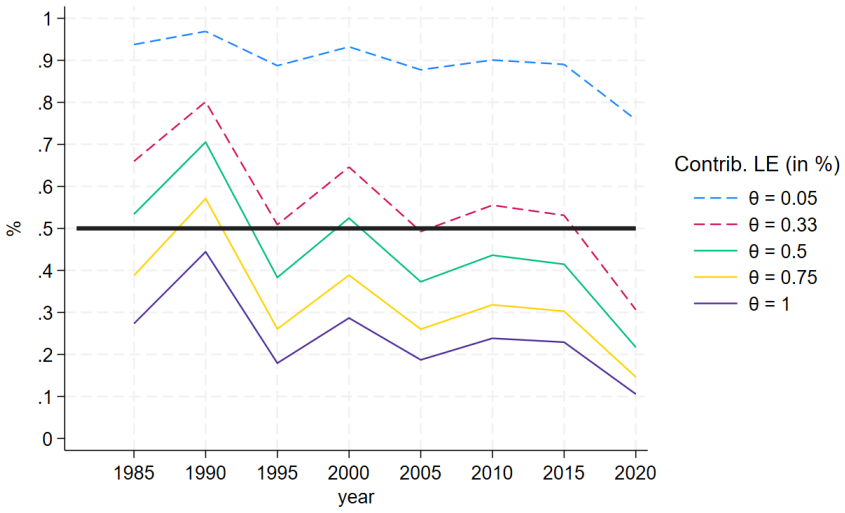


Figure 13: Contribution of life expectancy in PALE changes (5-year intervals)
Data source: Life expectancy at birth is from the UN Population Division (World Population Prospects), accessed via the World Bank Data Catalog. The societal poverty rate is from the World Bank's Poverty and Inequality Platform (PIP).

5.2 Effect of COVID-19 Pandemic on Well-being

Second, we study how the COVID-19 pandemic affected well-being through excess mortality and increases in poverty over the period 2020-2021, building on the work of Ferreira et al. (2021) and Decerf et al. (2024). For each country, these studies estimate the number of additional poverty years (PY) due to the pandemic-induced contraction and the number of years of life lost (YLL) to excess mortality over the period. In our application, we build on the data and results of Decerf et al. (2024), showing how our estimate of θ allows us to reach more precise conclusions. The sample contains the 122 most populous countries, accounting for roughly 95 percent of the global population.

Globally, the pandemic generated 4.7 additional PYs per 100 persons and 2.1 YLLs per 100 persons, as reproduced in Table 4. Whether mortality or poverty represents the larger welfare loss depends on the value of θ (see Equation (3)). The break-even value (denoted by $\tilde{\theta}$ and equal to $\frac{\#YLLs}{\#PYs}$) at which both channels contribute equally to well-being losses is 0.44.

Our survey results suggest that the minimal plausible value for θ is 0.5, which is larger than $\tilde{\theta}$. The global welfare loss from the pandemic was therefore primarily driven by the increase in poverty, although excess mortality remains an important component of the overall loss.

However, the relative importance of the two channels varies markedly across country groups. For low- and lower-middle-income countries, estimated break-even values of $\tilde{\theta}$ are well below 0.5, implying that poverty increases are the main channel of welfare losses during the pandemic. By contrast, for upper-middle- and high-income countries, break-even values exceed 1, reflecting the fact that excess mortality was substantial while impacts on poverty were often mitigated by temporary social protection policies. Under the natural restriction that $\theta \leq 1$, excess mortality is therefore the primary driver of welfare losses in these countries. This analysis shows that the relative importance of mortality and poverty during the COVID-19 pandemic depends on the context and that, globally, both dimensions should be taken into account in assessments of welfare impacts.

Table 4: Poverty and mortality consequences of COVID-19 over 2020-2021

Variable	Units	World	LIC	LMIC	UMIC	HIC
Additional Poverty	PYs per 100 pers.	4.7	5.3	9.4	1.6	-1.2
Excess Mortality	YLLs per 100 pers.	2.1	1.0	2.6	1.8	2.1
Break-even $\tilde{\theta}$		0.44	0.19	0.28	>1	"$\tilde{\theta}$>1"
Break-even $1/\tilde{\theta}$	PYs per YLL	2.2	5.3	3.6	<1	"$\tilde{\theta}$<1"

Note: Additional poverty and excess morality estimates are taken from Decerf et al. (2024). Break-even $\tilde{\theta}$ is the value for θ for which the two sources of well-being losses have equal impact on well-being (i.e., $\tilde{\theta}$ equals excess mortality divided by additional poverty). For some HICs like the US, poverty has actually been *reduced* by social protection policies enacted during the pandemic. The negative value for PYs implies there is no break-even value for θ for HICs. For convenience, we report this by writing "$\tilde{\theta}$>1", to signal that excess mortality is the dominant source of wellbeing losses in HICs.

5.3 Impact on Well-being from Removing Energy Subsidies

Addressing climate change is another arena where policymakers face stark trade-offs between lives and livelihoods on a large scale. A particularly salient example of this is the removal of energy subsidies. These subsidies contribute to excessive fossil fuel consumption by keeping energy prices artificially low for households, resulting in a large number of premature deaths (mainly due to air pollution) (IMF, 2025). Removing these subsidies generates a clear *short-term* trade-off: substantial gains in longevity, but large reductions in household purchasing power, particularly among poorer households, unless compensation is provided.

We use recent International Monetary Fund (IMF) estimates of changes in mortality and poverty from the removal of energy subsidies to illustrate how our parameter, θ, informs the evaluation of such reforms. Comprehensive energy subsidy removal is expected to avert approximately 1.1 million premature deaths globally each year by reducing local air pollution (IMF, 2025). Using standard Global Burden of Disease life tables, this cor-

responds to roughly 25 million life-years saved per year (GBD, 2020). At the same time, higher energy prices raise household costs of living in the absence of compensatory policies. Based on conservative assumptions regarding household energy expenditure shares, pass-through to consumer prices, and poverty elasticities, we estimate that full subsidy removal without compensation would generate on the order of 150 million additional poverty-years globally per year (see subsection A.5 in Appendix).

Using these IMF estimates, we examine the short-term well-being impacts of removing energy subsidies entirely through the lens of the poverty-mortality trade-off, abstracting from longer-run growth and climate-damage channels. Obviously, there are reasons beyond immediate mortality loss to remove these subsidies, but for the purposes of this exercise, we are ignoring this. Rather, we focus on a key choice for policymakers: how much compensation should be provided to offset the reduction in purchasing power from removing subsidies, i.e., so that "total" short run well-being impacts (see Eq. (3)) are positive. We illustrate this formally by computing the net well-being impact from subsidy reform, measured in life-year equivalents, as follows:

$$W = L - \theta \times P \times (1 - s), \tag{12}$$

where L denotes the number of years of life lost avoided, P denotes the number of additional poverty-years generated absent compensation, s is the share of poverty-years offset through compensation, and $\theta \in [0, 1]$ measures the number of poverty-years deemed welfare-equivalent to one year of life lost.

This exercise illustrates three central insights, as shown in Figure 14. First, absent compensation ($s = 0$), the net impact of removing the energy subsidy on well-being is negative for most θ values in $[0, 1]$, despite saving millions of life-years, as short-run increases in poverty dominate, except for θ values close to zero. Second, the compensation required for neutrality is highly sensitive to θ. For values of θ in the range we estimate empirically ($\theta \geq 0.5$), the minimal break-even amount of compensation required is around 67 percent of the total increase in poverty. Third, under smaller values of θ (e.g., $\theta = 0.05$), no compensation is required for the increase in well-being from longevity to offset the increases in poverty.

These findings illustrate that, in the absence of our empirically estimates that reduce the plausible range for θ, different values in the $[0, 1]$ range would yield dramatically different policy conclusions. No compensation is needed for a positive net welfare impact if $\theta = 0.05$. In contrast, the minimal value we estimate ($\theta = 0.5$) suggests that at least two-third of the increase in poverty must be compensated. Clearly, our short-run analysis does not capture the full dynamic welfare gains from climate mitigation,[31] but its calculations can be interpreted as capturing the short-term well-being trade-offs relevant

[31] It abstracts from the longer-run poverty reductions that could result from mitigating climate change.

for political feasibility and transitional policy design.

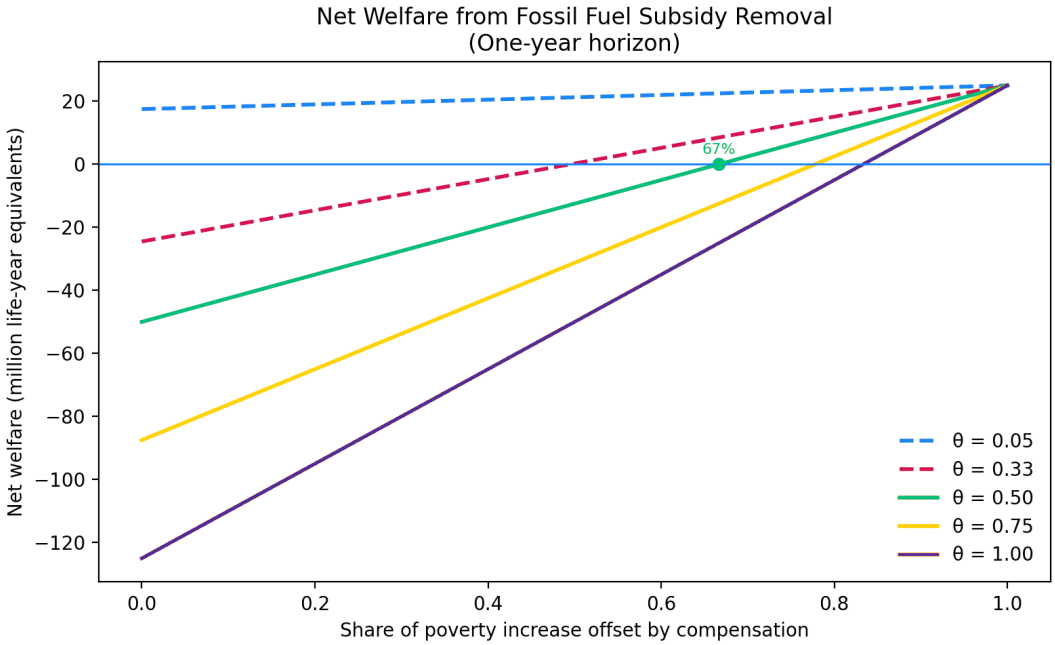


Figure 14: Net welfare from energy subsidy removal evaluated over a one-year adjustment horizon.

This application illustrates the policy relevance of the paper's central contribution. The full short-term well-being impacts of energy subsidy reform cannot be evaluated without an explicit welfare trade-off between mortality and material deprivation. By providing empirically grounded estimates of θ, we ground this trade-off in people's attitude, which allows sharply restricting the range of welfare conclusions that can be drawn, clarifying the conditions under which climate policies must be paired with compensation to improve short-term well-being.

6 Conclusion

This paper provides the first evidence on a key welfare parameter whose value affects many policy decisions: the relative value people place on avoiding poverty versus extending their lifespan. We introduce and estimate the parameter θ, which captures how years in poverty compare to years of life lost, using large-scale randomized survey experiments across seven middle- and high-income countries. Our central finding is that on average, respondents are willing to spend no more than two years in poverty to increase their lifespan by one year. This suggests that poverty reductions carry well-being benefits comparable in magnitude to substantial increases in longevity.

Our estimates are subject to important limitations. First, they are derived from online survey responses to contingent valuation questions that necessarily involve hypo-

thetical scenarios. Although we implement extensive robustness and design safeguards, hypothetical bias and framing sensitivity remain inherent concerns when eliciting preferences over extreme outcomes such as mortality and poverty. Second, our baseline analysis relies on national poverty lines to anchor deprivation, introducing arbitrariness and cross-country heterogeneity in the definition of poverty. Future work should investigate how sensitive θ is to alternative poverty thresholds, including the extreme poverty line and multidimensional poverty measures. More broadly, the parameter we estimate should be interpreted as a first step toward quantifying a complex welfare trade-off that may vary across contexts, populations, and decision environments.

Our results open several promising directions for future research. One advantage of our framework is that, conceptually, it frames trade-offs in terms of years of in poverty and years of life lost rather than assigning an explicit monetary value to life, which may render it is more human-centric and palatable for public debate. An important next step is to directly examine whether individuals find poverty-based trade-offs more morally acceptable and policy-relevant than VSL-based frameworks. A related question is whether the poverty lens, calibrated using our empirically grounded values of θ, yields policy prescriptions that are similar to or systematically different from those of VSL-based cost-benefit analyses. Finally, our findings have implications for global priority-setting efforts, including those associated with the effective altruism movement and major philanthropic actors. Incorporating empirically grounded welfare weights for poverty relative to mortality could substantially alter recommended allocations between interventions aimed at saving lives and improving livelihoods.

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A Online Appendix

A.1 Additional theory

A.1.1 Parametric estimates for θ from VSL

We provide the details on how we compute "back of the envelope" estimates for θ from VSL estimates together with additional information.

First, we explain why a second preference parameter is needed on top of the VSL. Conceptually, the main difference is that the VSL captures a *marginal* change in income, while parameter θ captures a *substantial* change in income.[32] The size of this income change is typically large. As discussed in Section 3.6, the factor by which the typical income of the poor must be multiplied to get to the typical income of the non-poor ($\frac{x_{NP}}{x_P}$) is typically between 2 and 5. Table A.1 shows mean and median values for the countries in our sample.

This conceptual difference implies the need to make additional assumptions about the *concavity* of the period utility function u (as suggested by Figure 1). Below, we consider two alternative options to get an estimate of the concavity of u. The first option is to assume a CES period utility function and select a value for its (fixed) elasticity of intertemporal substitution (EIS). The second option relies on estimates of the VSL's elasticity to income.

We focus on the US because it is the country for which VSL estimates and EIS estimates have been most studied (Kniesner and Viscusi, 2019). For 2022, the SPL for the US yields \$35 per person per day (PPP2017). Given this poverty line, the *mean* incomes x_{NP} and x_P are \$100 and \$22 per person per day, with a population mean of \$82 per person per day (PPP2017), which yields $\frac{x_{NP}}{x_P} = 4.6$.[33] Given this poverty line, the *median* incomes x_{NP} and x_P are \$78 and \$24 per person per day, with a population median of \$65 per person per day (PPP2017), which yields $\frac{x_{NP}}{x_P} = 3.3$. These values for x_{NP} and x_P are readily transformed to \$ per person per years. Table A.1 presents for each country in our sample the factor by which the typical income of the poor must be multiplied to get to the typical income of the non-poor ($\frac{x_{NP}}{x_P}$).

[32] See their definitions provided in Eqs (2) and (6).

[33] This income data is extracted from the Poverty and Inequality Platform of the World Bank.

Table A.1: Non-Poor income / Poor income ratios ($\frac{x_{NP}}{x_P}$) in seven countries.

"Typical" income	Colombia	India	Indonesia	Nigeria	South Africa	United Kingdom	United States
Mean	5.6	2.7	3.1	2.9	8.7	3.6	4.6
Median	3.5	2.0	2.4	2.4	4.4	2.8	3.3

Note: The figures are computed from data taken from the Poverty and Inequality Platform of the World Bank. The line-up year considered is 2019 and the poverty line used is each country's Societal Poverty Line ($PPP2017).

We select a plausible range for the value of the VSL for the US circa 2022, taken to be between $5 million and $15 million.[34]

Estimates based on CES period utility

Our first estimates rely on the (classical) assumption of a constant elasticity of substitution (CES) period utility function

$$u^{CES} = \frac{x^{1-\frac{1}{\gamma}} - \dot{x}^{1-\frac{1}{\gamma}}}{1-\frac{1}{\gamma}} \tag{13}$$

where parameter γ is the elasticity of intertemporal substitution (EIS).

From the definition of lifetime utility (Equation (1)) and of the VSL (Equation (2)), we get a relationship between the elasticity of the period utility function, denoted by ϵ, and the VSL, namely

$$\epsilon(x) \coloneqq \frac{\partial u(x)/\partial x}{u(x)/x} = \frac{x}{VSL} \times \frac{\frac{1}{1+\rho}}{1-(1-\pi)\times\frac{1}{1+\rho}} \tag{14}$$

In turn, when assuming a CES period utility, elasticity ϵ can be related to the welfare neutral income $\dot{x}$ as follows

$$\dot{x} = \left(x^{1-\frac{1}{\gamma}} \times \left(1 - \frac{1-\frac{1}{\gamma}}{\epsilon(x)}\right)\right)^{\frac{1}{1-\frac{1}{\gamma}}}. \tag{15}$$

Together, Eqs (14) and (15) allow computing the welfare neutral income from the VSL

[34] Kniesner and Viscusi (2019) report that the National Highway Traffic Safety Administration used a VSL around $6.5 million in 2009 and the US Department of Health and Human services recommends a VSL of 9.6 $million in 2016. These authors also report the results of a meta-analysis of studies using fatality data generated by government agencies in the US, which find a mean VSL estimate at 13.8 $million in 2015.

estimate.

To produce parametric estimates for θ, there remains to pick values for the discount factor, the probability to die each year π and, most importantly, for the EIS. We select a discount rate of 3% so that $\frac{1}{1+\rho} = 0.97$, in line with Becker et al. (2005) and Boarini et al. (2022). For π, we follow Boarini et al. (2022) who suggest selecting $\pi = \frac{1}{RLE}$, where RLE denotes the remaining life expectancy for the person whose VSL is estimated. We assume $RLE = 40$ years, which corresponds roughly to the difference between life expectancy at birth in the US and the age of a 35-years old individual, which yields $\pi = 0.025$.

We consider two sets of values for x_{NP} and x_P for the US, respectively corresponding to their mean and median values. The former is such that $\frac{x_{NP}}{x_P} = 4.6$ and the latter such that $\frac{x_{NP}}{x_P} = 3.3$. The larger this ratio, the smaller θ, as easily grasped from Figure 1.

There is no consensus on the exact value to select for the EIS (γ). In their meta-analysis of the literature estimating the EIS in different countries, Havranek et al. (2015) find that the mean estimate for EIS reported in their sample of empirical studies is 0.5. However, estimates vary greatly depending on the sample used, the exact method, and the country considered. In their Figure 1, they use a plausible range between 0.1 and 1.5. To be conservative, we consider a somewhat smaller plausible range between 0.3 and 1.

Table A.2 reports our parametric estimates for θ as a function of the values selected for the key parameters, namely the VSL and the EIS. We propose two subtables, which differ by the value selected for the ratio $\frac{x_{NP}}{x_P}$.

Table A.2: Parametric estimates for θ for the US circa 2022 from CES period utility using VSL and EIS estimates.

(a) $\frac{x_{NP}}{x_P} = \frac{100}{22} = 4.6$

EIS	\$5 million	\$10 million	\$15 million
0.3	0.94	0.48	0.32
0.6	0.24	0.12	0.08
1	0.16	0.08	0.05

(b) $\frac{x_{NP}}{x'_P} = \frac{78}{24} = 3.3$

EIS	\$5 million	\$10 million	\$15 million
0.3	0.76	0.38	0.25
0.6	0.20	0.10	0.07
1	0.13	0.06	0.04

Note: Authors' calculations.

Our back of the enveloppe parametric estimates for θ based on CES utility lie in a range $[0.04, 0.94]$. This means that the number $\frac{1}{\theta}$ of PYs that are as bad as one YLL lie in a range $[1.1, 24]$. The range for plausible values for $\frac{1}{\theta}$ is thus quite large.

Estimates based on the VSL's elasticity to income

Our second estimates do not rely on a parametric specification for the period utility function. Rather, they rely on empirical estimates of the VSL's elasticity to income, denoted by η, and defined as

$$\eta = \frac{\partial VSL/\partial x}{VSL/x}, \tag{16}$$

whose value depends on the concavity of the period utility function.

One important stylized fact is that the VSL is increasing with incomes, which implies its elasticity to incomes is strictly positive. Empirical estimates of the VSL's elasticity are themselves decreasing with income, with η smaller in richer countries. As reported by Kniesner and Viscusi (2019), a meta-analysis by Viscusi and Masterman (2017) finds $\eta = 0.55$ in the US and $\eta = 1.1$ in other (typically poorer) countries. Different approaches lead to different values. They report that a labor market approach by Kniesner et al. (2010) finds $\eta = 2.2$ at the 10th percentile and $\eta = 1.2$ at the 75th percentile.

Again, there is no consensus on the value of η and by how much η changes as we me move along the income distribution between poor and non-poor individuals. In Table A.3 below, we consider three markedly different values of η, namely 0.5, 1 and 2.

We estimate θ using the following iterative linear approximation procedure.

- Without loss of generality, we assume $u(x_{NP}) = 1$. We also take $VSL(x_{NP}) = VSL$.
- For $t \in \{0, 1, \ldots, T\}$, we iteratively compute $u(x_{t+1})$ from $u(x_t)$, where $x_{t+1} = 0.99x_t$ and starting with $x_0 = x_{NP}$ and ending when $x_T = x_P$.
- In each iteration, we compute $u(x_{t+1})$ from $u(x_t)$ using the linear approximation

$$u(x_{t+1}) = u(x_t) - \frac{\partial u(x_t)}{\partial x} \times (x_t - x_{t+1}).$$

  The derivative of function u can be obtained from the elasticity $\epsilon(x_t)$. By definition of $\epsilon(x_t)$, we have

$$\frac{\partial u(x_t)}{\partial x} = \epsilon(x_t) \times \frac{u(x_t)}{x}$$

  where $\epsilon(x_t)$ can be computed from $VSL(x_t)$ using Equation (14). We also compute $VSL(x_{t+1})$ from $VSL(x_t)$ and η, using a similar linear approximation.

- By construction, we have

$$\theta = \frac{u(x_{NP}) - u(x_P)}{u(x_{NP}) - u(D)} = \frac{1 - u(x_T)}{1 - 0}$$

Table A.3 reports the estimates we get for different choices of parameters.

Table A.3: Parametric estimates for θ for the US circa 2022 using the VSL and the elasticity of the VSL (η).

(a) $\frac{x_{NP}}{x_P} = 4.6$

η	\$5 million	\$10 million	\$15 million
2	0.37	0.20	0.14
1	0.18	0.09	0.06
0.5	0.13	0.07	0.05

(b) $\frac{x_{NP}}{x_P} = 3.3$

η	\$5 million	\$10 million	\$15 million
2	0.20	0.11	0.07
1	0.11	0.06	0.04
0.5	0.09	0.04	0.03

Note: Authors' calculations.

Our back-of-the-envelope parametric estimates based on η lie in a range $[0.03, 0.37]$. This means that the number $\frac{1}{\theta}$ of PYs that are as bad as a YLL lie in a range $[2.7, 33]$. The plausible values for $\frac{1}{\theta}$ are larger than in Table A.2. However, these estimates are at odds with our (more direct) survey-based estimates, which are typically such that $\theta \geq 0.5$ (see Table 1).

A.1.2 Estimating θ from the relationship between $\beta_i^{x_i/4}$ and $\beta_i^{x_i/2}$

As $\beta_i^{x_i/4}$ denotes the fraction of utility lost when income is divided by four, we have $\beta_i^{x_i/4} > \beta_i^{x_i/2}$. Conceptually, we have the following relationship

$$\underbrace{\frac{u_i(x_i) - u_i(x_i/4)}{u_i(x_i) - u_i(\dot{x})}}_{:=\beta_i^{x_i/4}} = \underbrace{\frac{u_i(x_i) - u_i(x_i/2)}{u_i(x_i) - u_i(\dot{x})}}_{:=\beta_i^{x_i/2}} + \frac{u_i(x_i/2) - u_i(x_i/4)}{u_i(x_i) - u_i(\dot{x})}.$$

Using the notation $\gamma_i^{x_i/2} := \frac{u_i(x_i/2) - u_i(x_i/4)}{u_i(x_i/2) - u_i(\dot{x})}$, where $\gamma_i^{x_i/2}$ denotes the fraction of utility that i would loose if her (counterfactual) income x_i' was halved in the counterfactual situation where her income is already halved, i.e., $x_i' = x_i/2$, last equation can be rewritten as[35]

$$\beta_i^{x_i/4} = \beta_i^{x_i/2} + \gamma_i^{x_i/2} - \beta_i^{x_i/2} \times \gamma_i^{x_i/2}. \tag{17}$$

Of course, the "half-income cost" version probes the value for $\beta_i^{x_i/2}$, not the value for $\gamma_i^{x_i/2}$. Empirically, we find that $\beta_i^{x_i/2}$ tends to decrease with income x_i, which suggests

[35] To see this, recall that $u_i(\dot{x}) = 0$ and that by definition we have $\frac{u(x_i/2)}{u(x_i)} = 1 - \beta_i^{x_i/2}$, so that $\frac{u_i(x_i/2) - u_i(x_i/4)}{u_i(x_i) - u_i(\dot{x})} = \frac{u_i(x_i/2)}{u_i(x_i)} \times \gamma_i^{x_i/2}$.

that $\gamma_i^{x_i/2} > \beta_i^{x_i/2}$. From Equation (17), this implies that

$$\beta_i^{x_i/4} > \underbrace{\beta_i^{x_i/2} + \beta_i^{x_i/2} - \beta_i^{x_i/2} \times \beta_i^{x_i/2}}_{:=\underline{\beta}_i^{x_i/4}}.$$

Respondent i's answer to the "half-income cost" version tells us whether $\beta_i^{x_i/2} < \hat{\beta}(\rho_i)$. To reconstruct a CDF for $\beta_i^{x_i/4}$ we would need $\beta_i^{x_i/4} < \hat{\beta}'(\rho_i)$ for many respondents, for several values for $\hat{\beta}'(\rho_i)$, where $\hat{\beta}'(\rho_i)$ denotes the threshold value for $\beta_i^{x_i/4}$ under which the respondent takes the costly drug (where the cost implies her household income is divided by four). Our strategy is to assume

$$\beta_i^{x_i/2} < \hat{\beta}(\rho_i) \qquad \Rightarrow \qquad \beta_i^{x_i/4} < \underbrace{\hat{\beta}(\rho_i) + \hat{\beta}(\rho_i) - \hat{\beta}(\rho_i) \times \hat{\beta}(\rho_i)}_{:=\hat{\beta}'(\rho_i)}$$

where this assumption is "conservative" in the sense that it will overestimate the fraction of individuals for whom $\beta_i^{x_i/4} < \hat{\beta}'(\rho_i)$. The reason for this overestimation is that the threshold value $\hat{\beta}'(\rho_i)$ is smaller than what its value would be if this threshold was computed using Equation (17) rather than using $\underline{\beta}_i^{x_i/4}$, because $\beta_i^{x_i/4} > \underline{\beta}_i^{x_i/4}$.

Hence, we construct a CDF for $\beta_i^{x_i/4}$ using the answers to the "half-income cost" version, simply adjusting the threshold values from $\hat{\beta}(\rho_i)$ to $\hat{\beta}'(\rho_i)$. Given that our assumption "over-adjusts" the threshold values $\hat{\beta}'(\rho_i)$, making them smaller than what they should be, the values $\beta_{mean}^{x_i/4}(\rho)$ and $\beta_{median}^{x_i/4}(\rho)$ obtained under this procedure are *smaller* than those that would be obtained if $\hat{\beta}'(\rho_i)$ could be computed using Equation (17).

A.2 Additional tables

A.2.1 Poverty lines used in the survey

Poverty lines are presented to respondents to anchor their perceptions about what it means to be poor. For each country, we take the value of the Societal Poverty Line from the Poverty and Inequality Plateform of the World Bank (PIP) in the 2022 line-up year, which is provided in $PPP 2017 per person per day (see Table A.4). Then, we use the 2017 PPP rates used in PIP to translate these amounts from international dollars to local currencies in 2017. Finally, we use CPI data from World Development Indicators to inflate these amounts to the survey year.

The poverty line presented to respondents is shown in the last column of Table A.4.

Table A.4: Societal poverty lines in international currency and local currencies.

Country	survey year	SPL in 2022 ($PPP2017 per pers. per day)	SPL in survey year (local currency per pers.)
Colombia	2025	6.0	430 000 pesos per month
India	2024	3.2	2700 rupees per month
Indonesia	2025	4.1	780 000 IDN rupees per month
Nigeria	2024	2.6	29 000 Naira per month
South Africa	2024	3.6	1000 rands per month
United Kingdom	2024	25.7	9800 pounds per year
United States (w1)	2024	35.2	16 800 dollars per year
United States (w2)	2025	35.2	16 800 dollars per year

Note: Authors' calculations.

A.2.2 Sample of respondents relative to the general population

Table A.5: Differences between the survey (Sur) and general population (Pop) in each country (%)

	COL		IND		IDN		NIG		SA		UK		US	
	Sur	Pop	Sur	Pop	Sur	Pop	Sur	Pop	Sur	Pop	Sur	Pop	Sur	Pop
Male	48	49	53	51	53	50	51	50	47	49	49	49	49	50
18-24 years	17	16	25	18	30	16	25	26	23	17	14	13	12	14
Urban	94	83	90	37	89	59	95	55	90	69	76	85	81	84
University	49	27	78	15	42	12	73	9	50	17	58	49	51	50
Bottom 40%	56	40	15	40	60	40	19	40	10	40	28	40	45	40

Notes: Data about the general population (Pop) sourced from WorldBank (2025). *COL:* Colombia, *IND:* India, *IDN:* Indonesia, *NIG:* Nigeria, *SA:* South Africa, *UK:* United Kingdom, *US:* United States, The definition of urban areas varied by country and may not be directly comparable to the question asked in our survey about whether respondents reside in major cities, small cities/towns, or rural areas.

A.2.3 Logit regressions

Table A.6: Reweighted estimates of θ per country (Panel A). Reweighted lower-bound estimates of θ per country (Panel B and C)

		0% discounting		3% discounting	
	N	Median	Mean	Median	Mean
Panel A: Estimates of θ with $\theta_{m.}^{x_P}(\rho)$ (poverty cost)					
All observations (Waves 1 & 2)	46605	0.95	0.72	0.92	0.69
Wave 1	25287	0.87	0.68	0.79	0.63
Wave 2	21318	0.95	0.76	0.91	0.73
India	4437	0.85	0.67	0.75	0.63
Nigeria	5064	0.72	0.57	0.59	0.53
South Africa	4839	0.93	0.70	0.89	0.67
UK	5745	0.93	0.72	0.88	0.68
US (wave 1)	5202	0.89	0.70	0.81	0.66
US (wave 2)	11283	0.95	0.74	0.91	0.72
Colombia	5145	0.96	0.79	0.94	0.76
Indonesia	4890	0.95	0.76	0.91	0.73
Panel B: Lower-bound estimates of θ with $\beta_{m.}^{x_i/2}(\rho)$ (half-income cost)					
All observations (Wave 2 only)	6879	0.57	0.55	0.51	0.52
US (wave 2)	3600	0.60	0.58	0.54	0.55
Colombia	1659	0.73	0.58	0.64	0.55
Indonesia	1620	0.38	0.46	0.34	0.43
Panel C: Lower-bound estimates of θ with $\beta_{m.}^{x_i/4}(\rho)$ (half-income cost)					
All observations (Wave 2 only)	6258	0.55	0.57	0.51	0.54
US (wave 2)	3225	0.57	0.58	0.53	0.56
Colombia	1626	0.52	0.54	0.48	0.52
Indonesia	1407	0.55	0.56	0.50	0.53

Notes: Estimates of the parameter θ by survey wave, country, and method. Panel A reports estimates of $\theta_{m.}^{x_P}(\rho)$ from survey questions where taking the drug implies living in poverty. Panel B reports lower-bound estimates of θ provided by $\beta_{m.}^{x_i/2}$, which are based on the half-income cost questions, focused on respondents who report would be poor if their income was divided by 2. Panel C reports lower-bound estimates of θ provided by $\beta_{m.}^{x_i/4}$, which are based on the half-income cost questions, focused on respondents who report would be poor if their income was divided by 4. Columns report median and mean estimates under 0 percent and 3 percent discounting. Column N reports sample sizes.

A.3 Additional Figures

A.3.1 Robustness estimates

Table A.7: Predictors of willingness to take drug, Logit regressions (poverty cost)

	Take drug dummy		
	(1)	(2)	(3)
D (Years remaining without drug)	-0.0431***		-0.0107**
	(0.00408)		(0.00466)
N (Extra years thanks to the drug)	0.0222***		-0.00886***
	(0.000689)		(0.00219)
$\hat{\beta}(0)$		1.512***	1.916***
		(0.0429)	(0.126)
Question round	-0.0677***	-0.00297	0.0344***
	(0.00716)	(0.00586)	(0.0102)
Age	-0.0222***	-0.0223***	-0.0224***
	(0.00157)	(0.00158)	(0.00157)
Female	-0.162***	-0.161***	-0.163***
	(0.0346)	(0.0346)	(0.0346)
HH size	-0.0462***	-0.0472***	-0.0471***
	(0.0136)	(0.0136)	(0.0137)
Children	0.141***	0.142***	0.141***
	(0.0178)	(0.0178)	(0.0178)
Partnership	0.0392	0.0368	0.0378
	(0.0580)	(0.0582)	(0.0582)
Married	-0.0495	-0.0518	-0.0490
	(0.0497)	(0.0498)	(0.0498)
Divorced	0.00347	0.00249	0.00565
	(0.0840)	(0.0844)	(0.0843)
Widowed	0.113	0.106	0.109
	(0.134)	(0.135)	(0.134)
Positive about life	0.0553***	0.0557***	0.0559***
	(0.0119)	(0.0120)	(0.0120)
Belief in afterlife	0.0498***	0.0494***	0.0496***
	(0.0134)	(0.0134)	(0.0134)
Age too young to die	0.00328***	0.00335***	0.00332***
	(0.000849)	(0.000850)	(0.000851)
Death age (expected)	0.0239***	0.0238***	0.0239***
	(0.00159)	(0.00159)	(0.00159)
Income cat.	-0.0818***	-0.0833***	-0.0828***
	(0.0130)	(0.0130)	(0.0130)
Relative wealth (quintile)	-0.134***	-0.134***	-0.135***
	(0.0321)	(0.0322)	(0.0322)
Primary school	-0.234	-0.254	-0.257
	(0.324)	(0.324)	(0.324)
Secondary school	-0.493	-0.513*	-0.515*
	(0.305)	(0.305)	(0.306)
Post secondary	-0.426	-0.446	-0.449
	(0.304)	(0.304)	(0.304)
University	-0.367	-0.388	-0.391
	(0.303)	(0.303)	(0.304)
Observations	46902	46902	46902
R^2			

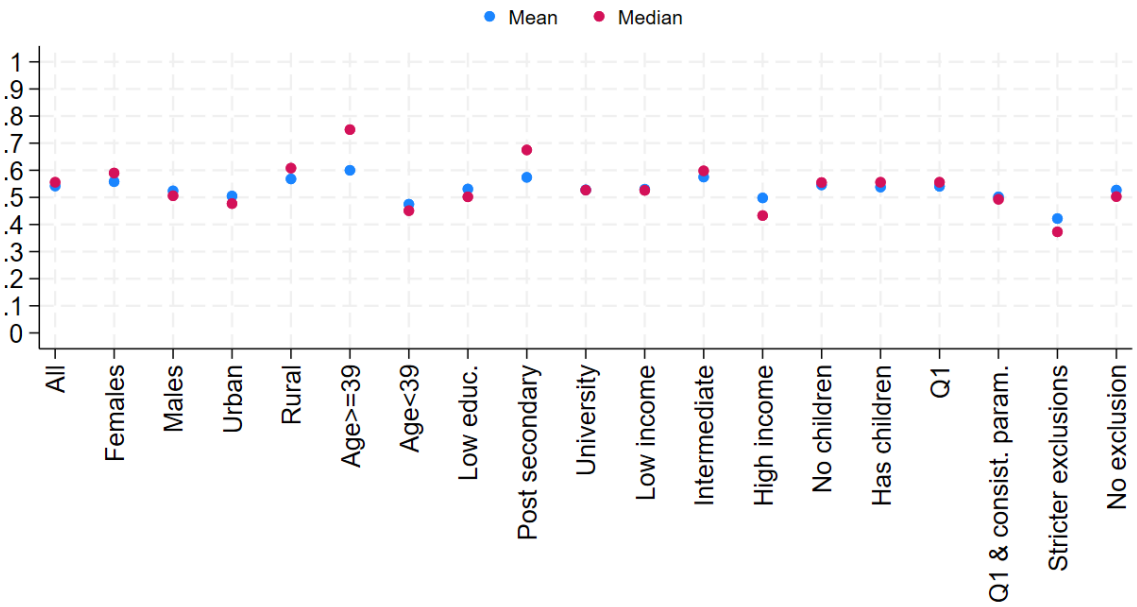
Data source: survey data. Survey fixed effects and question number fixed effects are included in all regressions. Significance levels are indicated by * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A.8: Predictors of willingness to take drug, Logit regressions (half-income cost)

	Take drug dummy					
	All observation			Poverty factor 2 (Wave 2)		
	(1)	(2)	(3)	(4)	(5)	(6)
D (Years remaining without drug)	-0.0520***		0.00142	-0.0526***		0.00488
	(0.00391)		(0.00452)	(0.0132)		(0.0148)
N (Extra years thanks to the drug)	0.0375***		-0.0152***	0.0432***		-0.00274
	(0.000733)		(0.00233)	(0.00146)		(0.00553)
$\hat{\beta}(0)$		2.357***	3.135***		2.415***	2.558***
		(0.0422)	(0.133)		(0.0815)	(0.310)
Question round	-0.167***	-0.0490***	0.00754	-0.257***	-0.0633***	-0.0508
	(0.00787)	(0.00669)	(0.0109)	(0.0222)	(0.0199)	(0.0335)
Age	-0.0375***	-0.0380***	-0.0381***	-0.0386***	-0.0392***	-0.0392***
	(0.00148)	(0.00149)	(0.00150)	(0.00343)	(0.00346)	(0.00346)
Female	-0.112***	-0.114***	-0.116***	-0.102	-0.102	-0.102
	(0.0324)	(0.0327)	(0.0327)	(0.0802)	(0.0807)	(0.0807)
HH size	-0.0144	-0.0162	-0.0166	-0.0446	-0.0464	-0.0465
	(0.0131)	(0.0132)	(0.0133)	(0.0333)	(0.0337)	(0.0337)
Children	0.125***	0.126***	0.126***	0.119***	0.118***	0.118***
	(0.0171)	(0.0172)	(0.0172)	(0.0423)	(0.0425)	(0.0426)
Partnership	-0.0285	-0.0296	-0.0300	0.0526	0.0596	0.0600
	(0.0541)	(0.0547)	(0.0547)	(0.127)	(0.128)	(0.128)
Married	0.00500	0.00470	0.00729	0.0471	0.0547	0.0551
	(0.0458)	(0.0462)	(0.0462)	(0.116)	(0.117)	(0.117)
Divorced	0.124	0.126	0.129	0.0943	0.114	0.116
	(0.0782)	(0.0788)	(0.0789)	(0.181)	(0.182)	(0.182)
Widowed	0.154	0.149	0.153	0.0485	0.0592	0.0596
	(0.127)	(0.127)	(0.127)	(0.341)	(0.338)	(0.338)
Positive about life	0.0891***	0.0921***	0.0923***	0.103***	0.103***	0.103***
	(0.0106)	(0.0108)	(0.0108)	(0.0215)	(0.0216)	(0.0216)
Belief in afterlife	0.0148	0.0144	0.0144	0.0442	0.0450	0.0450
	(0.0124)	(0.0125)	(0.0125)	(0.0315)	(0.0315)	(0.0315)
Age too young to die	0.00341***	0.00350***	0.00348***	0.000226	0.000330	0.000337
	(0.000792)	(0.000799)	(0.000799)	(0.00185)	(0.00187)	(0.00187)
Death age (expected)	0.0305***	0.0307***	0.0308***	0.0309***	0.0316***	0.0316***
	(0.00137)	(0.00138)	(0.00138)	(0.00366)	(0.00368)	(0.00368)
Income cat.	0.0248**	0.0237*	0.0238*	0.0292	0.0287	0.0286
	(0.0121)	(0.0122)	(0.0122)	(0.0310)	(0.0312)	(0.0312)
Relative wealth (quintile)	0.207***	0.208***	0.208***	-0.0302	-0.0303	-0.0305
	(0.0285)	(0.0287)	(0.0287)	(0.0824)	(0.0831)	(0.0831)
Primary school	-0.224	-0.248	-0.250	-0.309	-0.369	-0.371
	(0.356)	(0.359)	(0.361)	(0.915)	(0.901)	(0.901)
Secondary school	-0.433	-0.454	-0.458	0.0451	-0.0125	-0.0152
	(0.341)	(0.343)	(0.345)	(0.896)	(0.882)	(0.882)
Post secondary	-0.377	-0.400	-0.404	0.0188	-0.0430	-0.0458
	(0.339)	(0.341)	(0.344)	(0.895)	(0.881)	(0.881)
University	-0.272	-0.295	-0.300	0.111	0.0403	0.0368
	(0.339)	(0.341)	(0.344)	(0.895)	(0.880)	(0.880)
Observations	45354	45354	45354	6876	6876	6876
R^2						

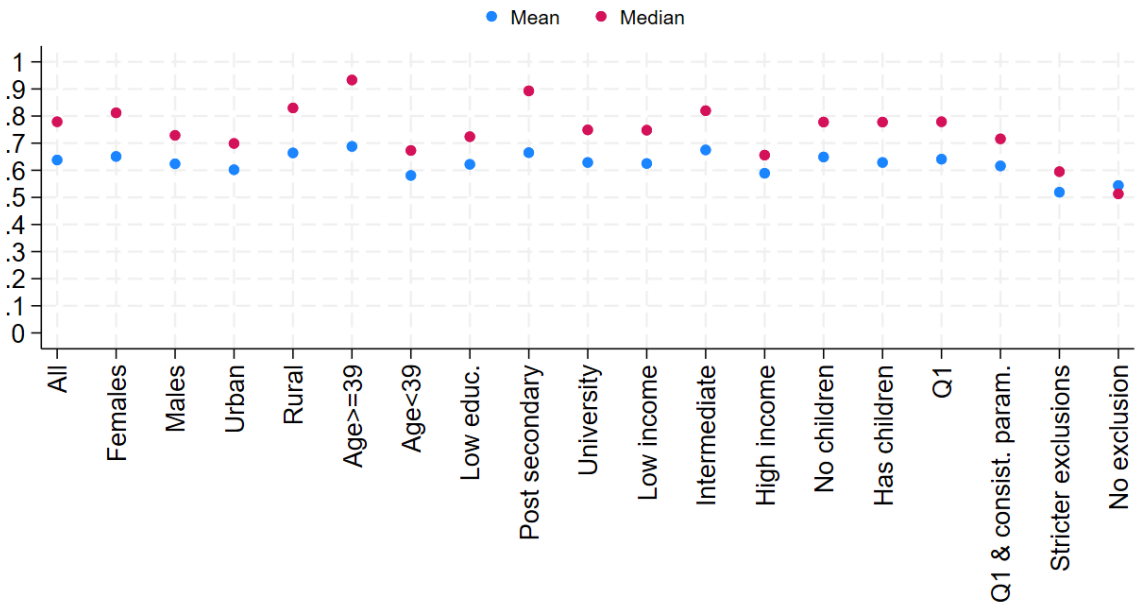
Data source: survey data. Survey fixed effects and question number fixed effects are included in all regressions. Significance levels are indicated by * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Figure A.1: Robustness estimates of θ (half-income cost, poverty factor 2)



Notes: This figure reports robustness estimates of the parameter θ obtained using the indirect method based on survey questions in which taking the drug halves household income, with poverty inferred using a factor of 2. The sample is restricted to respondents who report that halving household income would place them below the poverty line. Estimates are shown for different subsamples, as well as for alternative specifications and sample restrictions. All estimates are computed under a 0 percent discount rate.

Figure A.2: Robustness estimates of θ (half-income cost, poverty factor 4)



Notes: This figure reports robustness estimates of the parameter θ obtained using the indirect method based on survey questions in which taking the drug halves household income, with poverty inferred using a factor of 4. The sample is restricted to respondents who report that dividing their household income by four would place them below the poverty line. Estimates are shown for different subsamples, as well as for alternative specifications and sample restrictions. All estimates are computed under a 0 percent discount rate.

A.3.2 Information treatments provided to respondents in first wave

Figure A.3: Dollar street images shown to treatment group in US



Figure A.4: Dollar street images shown to treatment group in India



Notes: The first image shows the residence of a family living below the Societal Poverty Line in India. The second figure shows the residence of a family living on approximately twice the annual income of the family in the first image.

Figure A.5: Dollar street images shown to treatment group in Nigeria



Notes: The first image shows the residence of a family living below the Societal Poverty Line in Nigeria. The second figure shows the residence of a family living on approximately twice the annual income of the family in the first image.

Figure A.6: Dollar street images shown to treatment group in South Africa



Notes: The first image shows the residence of a family living below the Societal Poverty Line in South Africa. The second figure shows the residence of a family living on approximately twice the annual income of the family in the first image.

Figure A.7: Dollar street images shown to treatment group in the UK



Notes: The first image shows the residence of a family living below the Societal Poverty Line in the UK. The second figure shows the residence of a family living on approximately twice the annual income of the family in the first image.

A.4 Analysis of the Qualitative Responses

A.4.1 Overview

As discussed above, respondents were asked to rate their interest (definitely interested, potentially interested, or not at all interested) in taking a medicine that extends life beyond a certain number of years, but one that would require living on half their current income for life. Immediately following this question, they were asked to explain their answer in the following qualitative question:

Please briefly explain what is the main reason you stated you are [response to question 28] in taking this medicine that would allow you to live for beyond [pre-filled value] years, but whose cost implies you will live on half of your current income for the rest of your life.

The analysis of the open-ended responses helps to contextualize our quantitative findings by considering the concerns respondents hold when making this difficult choice. It also shows that most respondents engaged meaningfully with these questions and considered the implications on both their financial and personal lives.

A.4.2 Strategy

Following basic cleaning operations, we start by reviewing a comprehensive and unconditional list of all words that appear in the qualitative responses, without yet considering any context. This list is the starting point for our analysis. We then add layers of conditions to gain a deeper understanding of the context in which each word is used. Words combined with their context become meaningful 'keywords' which allow us to capture the essence of the response along with the intention of the respondent.

The first layer of contextualization looks at the respondent's qualitative answer in conjunction with the original intention to take the life-extending medicine (i.e. whether they indicated if they were "Definitely Interested," "Not at All Interested," or "Potentially Interested" in the medicine). For instance, the word "afford" can appear across all three possible responses but will likely suggest different intentions when conditioned on these responses. Those interested in taking the medicine are a lot more likely to suggest they have the resources to afford a loss of income ("I can afford this"). Whereas those who are not interested are more likely to suggest the inverse ("I cannot afford this medicine"). This also makes qualitative responses for those who are 'Potentially Interested' more challenging to analyze, as their responses can reflect reasons aligned with either interest or disinterest.

The second layer concerns contextual conditioning and looks at co-occurrence patterns and relationships between words. This includes, among other conditions: (i) Single-phrase clarity: rare instances where certain words, phrases or parts of phrases unambiguously

convey a specific meaning. For example, the occurrence of the word "selfish" almost certainly suggests that the respondent perceives extending life as a selfish decision. (ii) Word pairing: where the combination of two terms suggests an idea together. For example, "burden" and "family" when used together likely suggest the respondent wants to avoid burdening their family with lower income. (iii) Either/or distinction: where respondents commonly interchange terms to convey the same idea, e.g., "income" or "money", both highlight financial resources. (iv.) Negation: where a word or phrase's meaning is influenced by the absence of another word or phrase. For example, "afford" without "not" or "can't" narrows down the responses to cases where the respondent is likely going to suggest they can afford to take the loss in income. The negation condition also avoids misinterpreting words that appear as parts of other words. For example, when referencing "earn," we want to exclude "learn."

The four strategies are often used in conjunction. For instance, many word pairs might need to be combined with negations. Contextual conditioning is iterative. We continuously added conditions to refine the contexts.

A.4.3 Success rate

Overall, we were able to tag over 8200 responses with at least one keyword. This constitutes around 82% of compressible responses (responses that were at least 3 characters long and were not unintelligible such as only alpha-numerical symbols). Around 2% of the sample constituted responses that were evasive of the question with responses such as 'don't know' or 'no comment.'

We were successfully able to assign keywords to 89% of open-ended responses that preceded a "not at all interested" answer and 91% from those who answered "definitely interested" in taking the medicine. The success rate was lower for respondents who were "potentially interested," at 72%. This was not necessarily due to a lack of clarity in responses, but because identifying keywords in the correct context required additional iterations.

A.4.4 Keywords to themes

We identified 390 unique keywords in the qualitative responses. While each keyword is distinct, many convey similar ideas about reasons for taking or not taking the medicine. Consequently, we grouped similar keywords into one of 34 unique themes. For example, keywords like "be there for children" and "live for my family" express similar motivations for extending life and have been grouped into a common theme "family bonding". This helps simplify more complex analysis, such as keyness tests.

For qualitative responses where the respondent intended to offer justification for not taking the hypothetical medicine, the keywords were broadly categorized into a total

of 15 distinct themes. These themes encompass a range of practical, emotional, and value-driven considerations, primarily concerning the burden on others (such as family or children), financial concerns (including income reduction or poverty), or life philosophy (including a preference for a natural death or prioritizing quality over quantity of life). Other themes also cover emotional factors like stress, satisfaction with life already lived, or faith.

Responses from those interested in taking the medicine have been categorized into another 14 themes. These broadly cover the family bonding, value of life, or the desire to live longer, emphasize health, and completing pending goals. Other responses expressed optimism about managing reduced income, prioritizing life over money, or viewing the extended years of life as worth the tradeoff.

While most respondents in the "potentially interested" group were tagged to themes already covered under the two more decisive groups discussed above, a few others introduced some new, unique themes reflecting indecision, such as "weighing pros and cons" or contingency, such as "depends on how long I live".

A.4.5 Keyness tests

We conduct keyness tests as proposed by Ferrario and Stantcheva (2022), which are based on relative frequency analysis to compare the usage of specific words or n-grams (in our case, themes) between two groups: a target group and a reference group. The null hypothesis of the test assumes independence, i.e., the occurrence of a theme is assumed to be equally likely in both groups.

The test uses a chi-square (χ^2) statistic to measure how characteristic a given theme is for a specific group by comparing the actual (observed) frequency of each theme to its expected frequency under the null of independence. A positive test statistic indicates that the theme is more frequent in the target group, while a negative statistic indicates higher frequency in the reference group.

The null is rejected if the test statistic indicates a significantly higher occurrence for the theme in one of the groups. The test follows a chi-square distribution with one degree of freedom (number of groups minus one), which at the 5% significance level, suggests that the null hypothesis is rejected if the ($\chi^2| > 3.84$). We explicitly indicate this reference level in each figure.

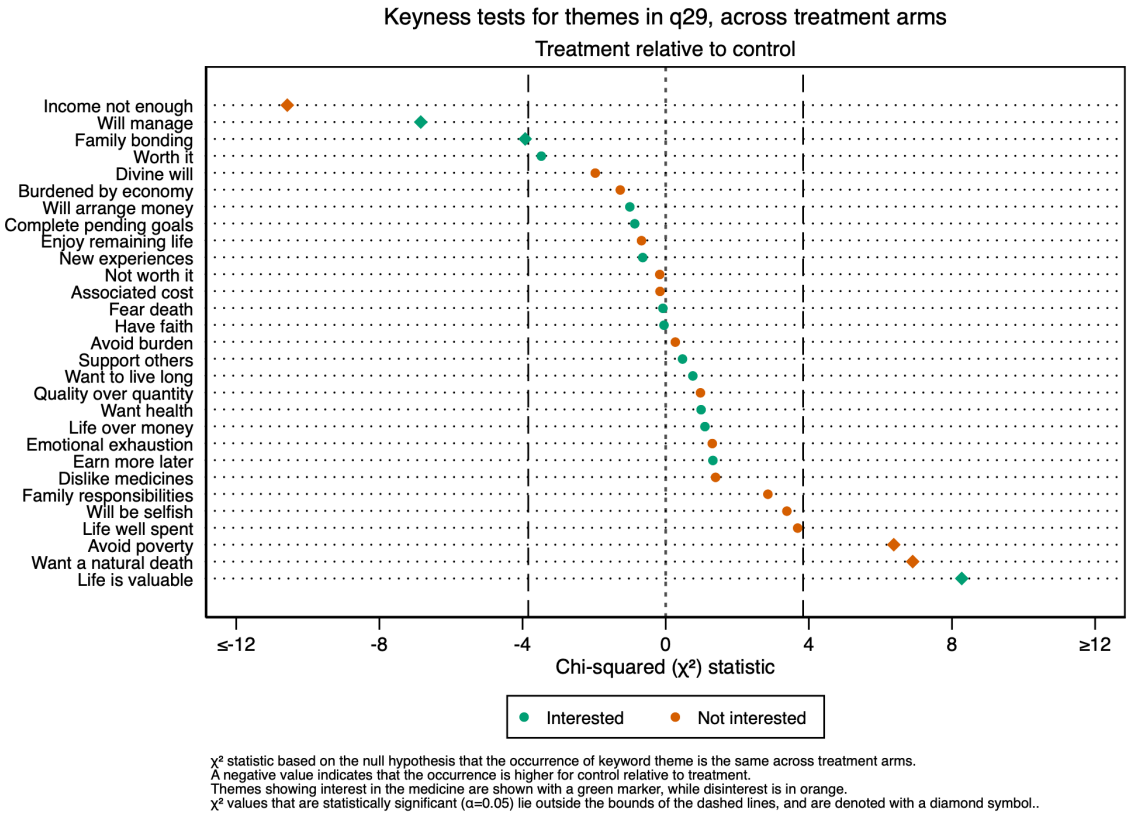
We conduct key-ness tests across the following groups (target vs reference, respectively):

- Treatment status: Treatment vs control
- Gender: Male vs female
- Age: Above 40 vs below 40

- Education: university educated vs not university educated
- Marital status: Married vs not married
- Parental status: No children vs has any number of children
- Location: Large cities vs all other locations
- Belief in after life: At least moderate belief vs little or no belief
- Relative income: Top 60% vs bottom 40%
- Relative wealth: Top 60% vs bottom 40%
- Personal life expectancy: Above or 80 vs below 80
- Threshold for premature death: 50 years and above vs below 50

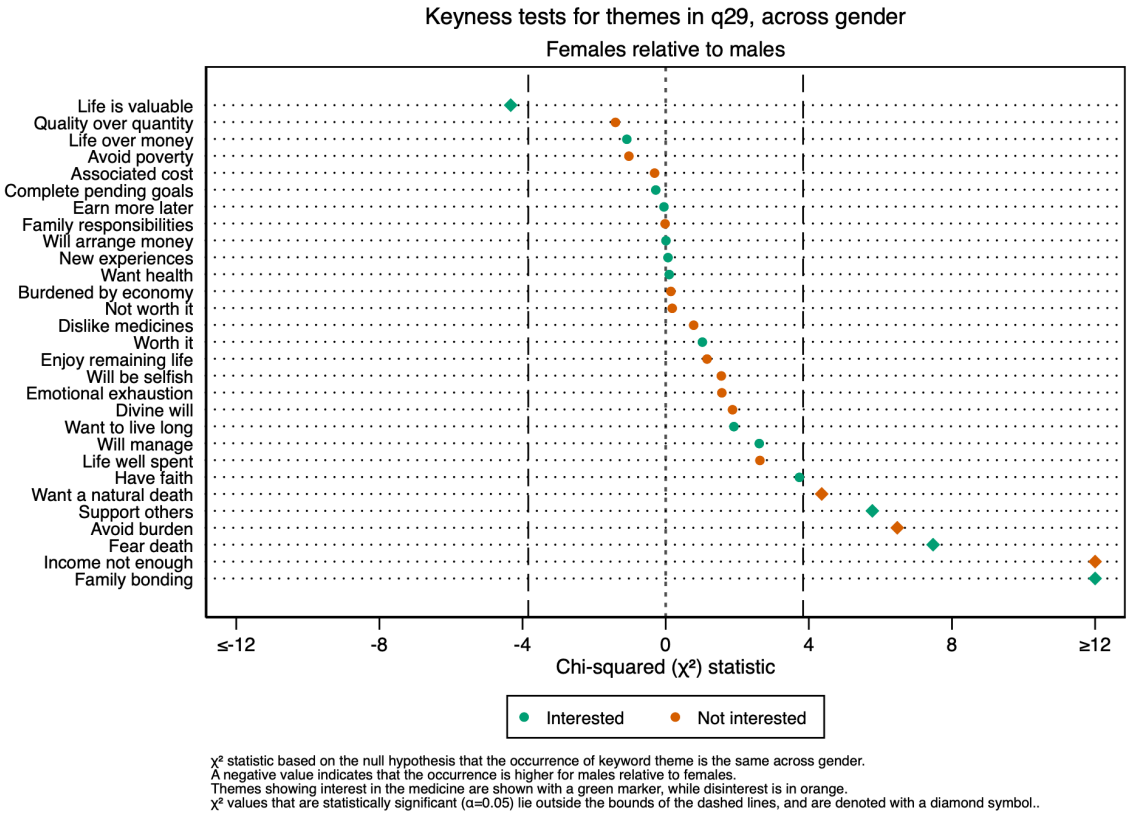
A.4.6 Keyness charts

Figure A.8: Differences in frequency of qualitative responses between treatment and control groups



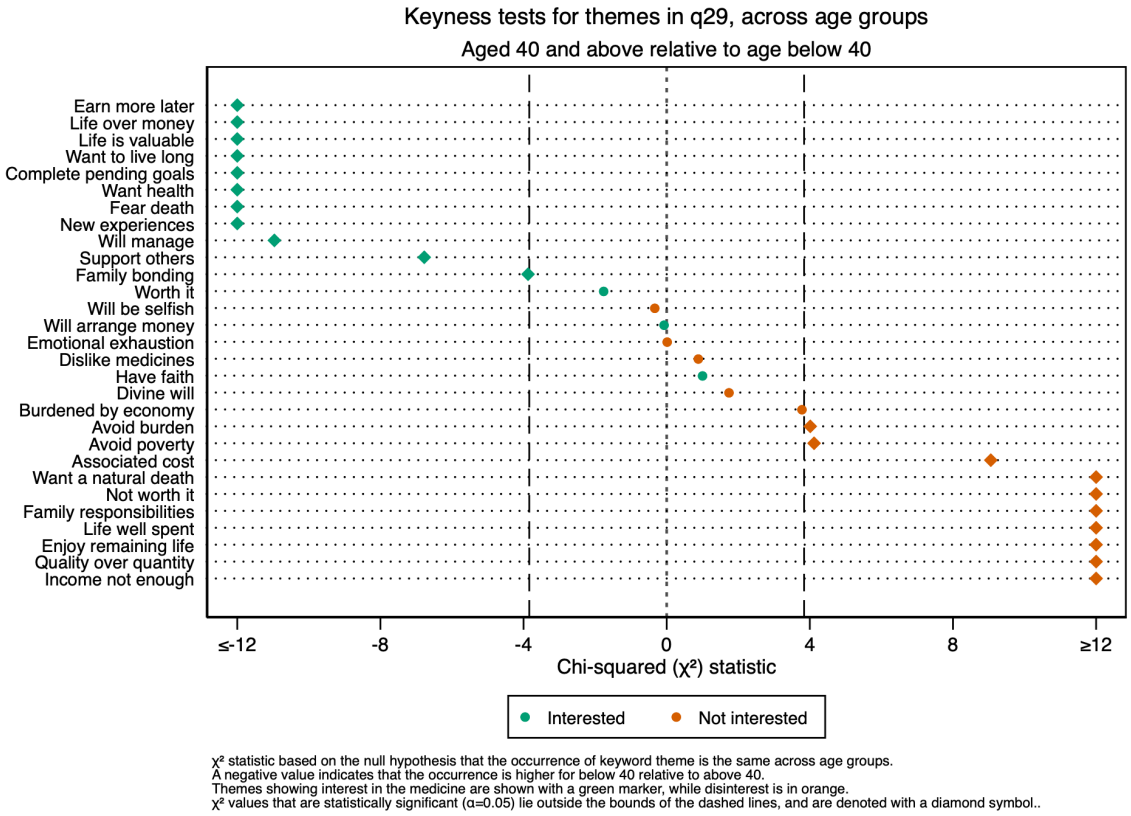
Notes: This figure shows the relative frequency of keywords between treatment and control groups, where a positive test statistic indicates that the keyword is more frequent in the treatment group, while a negative statistic indicates higher frequency in the control group.

Figure A.9: Differences in frequency of qualitative responses between genders



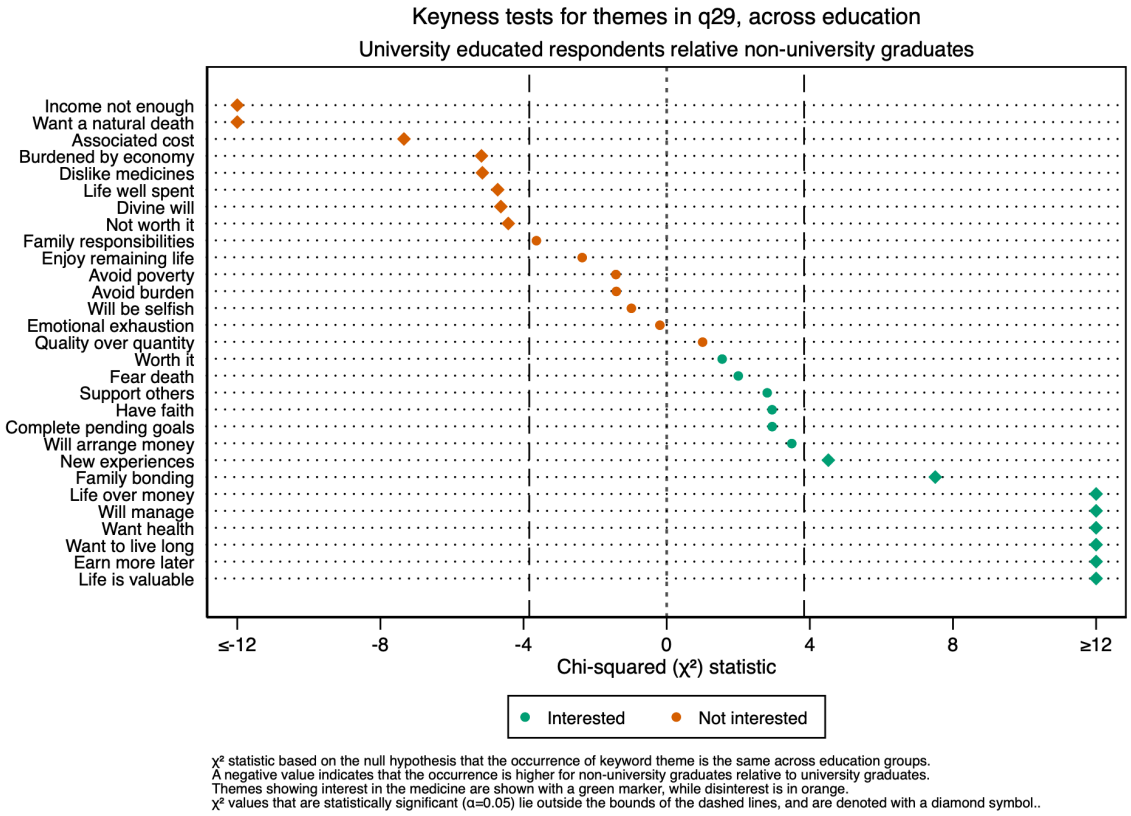
Notes: This figure shows the relative frequency of keywords between genders, where a positive test statistic indicates that the keyword is more frequent for females, while a negative statistic indicates higher frequency for males.

Figure A.10: Differences in frequency of qualitative responses between age groups



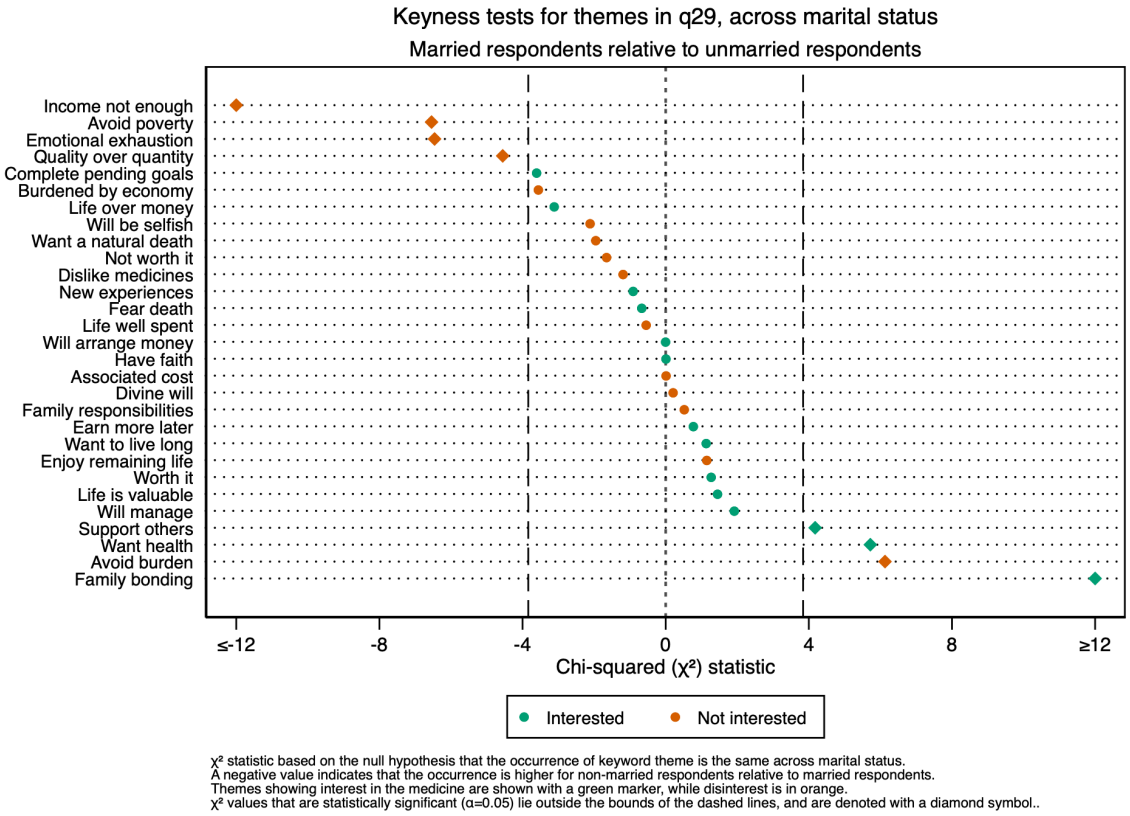
Notes: This figure shows the relative frequency of keywords between older and younger respondents, where a positive test statistic indicates that the keyword is more frequent among those aged 40 and above, while a negative statistic indicates higher frequency among those under 40.

Figure A.11: Differences in frequency of qualitative responses by education levels



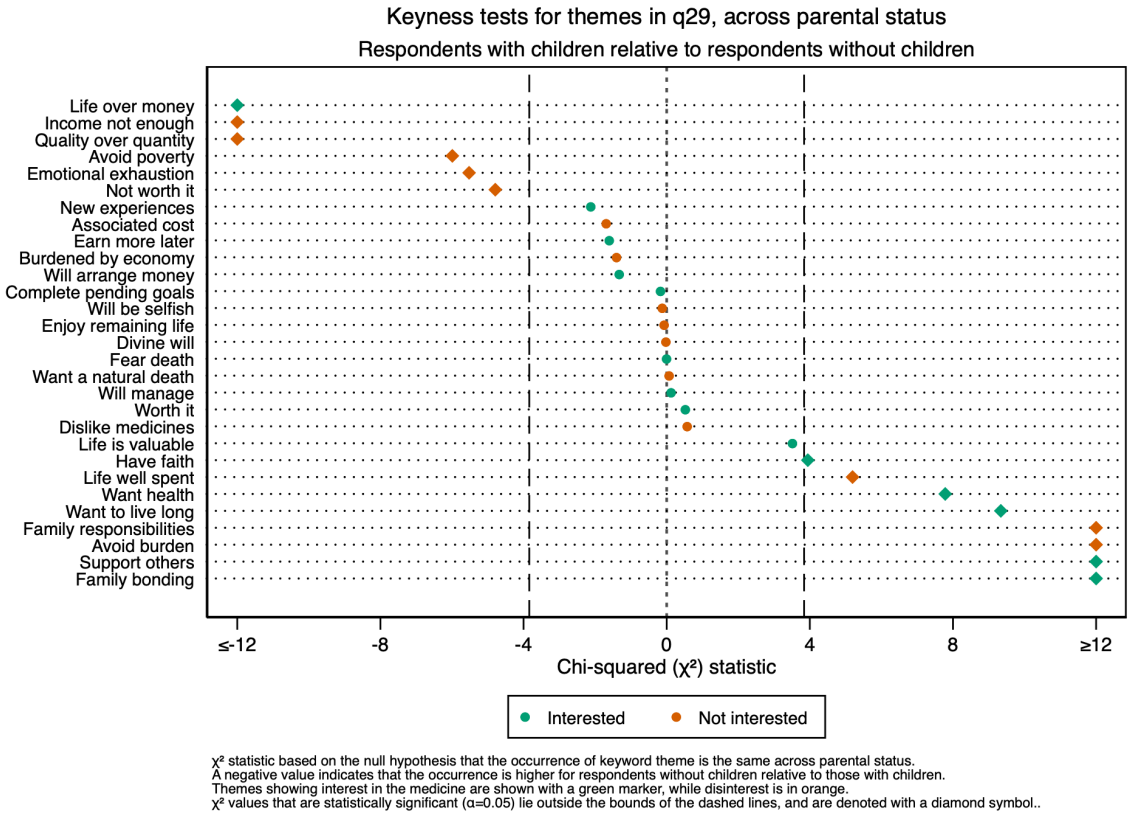
Notes: This figure shows the relative frequency of keywords between respondents based on education, where a positive test statistic indicates that the keyword is more frequent among those with university education, while a negative statistic indicates higher frequency among those without university education.

Figure A.12: Differences in frequency of qualitative responses by marital status



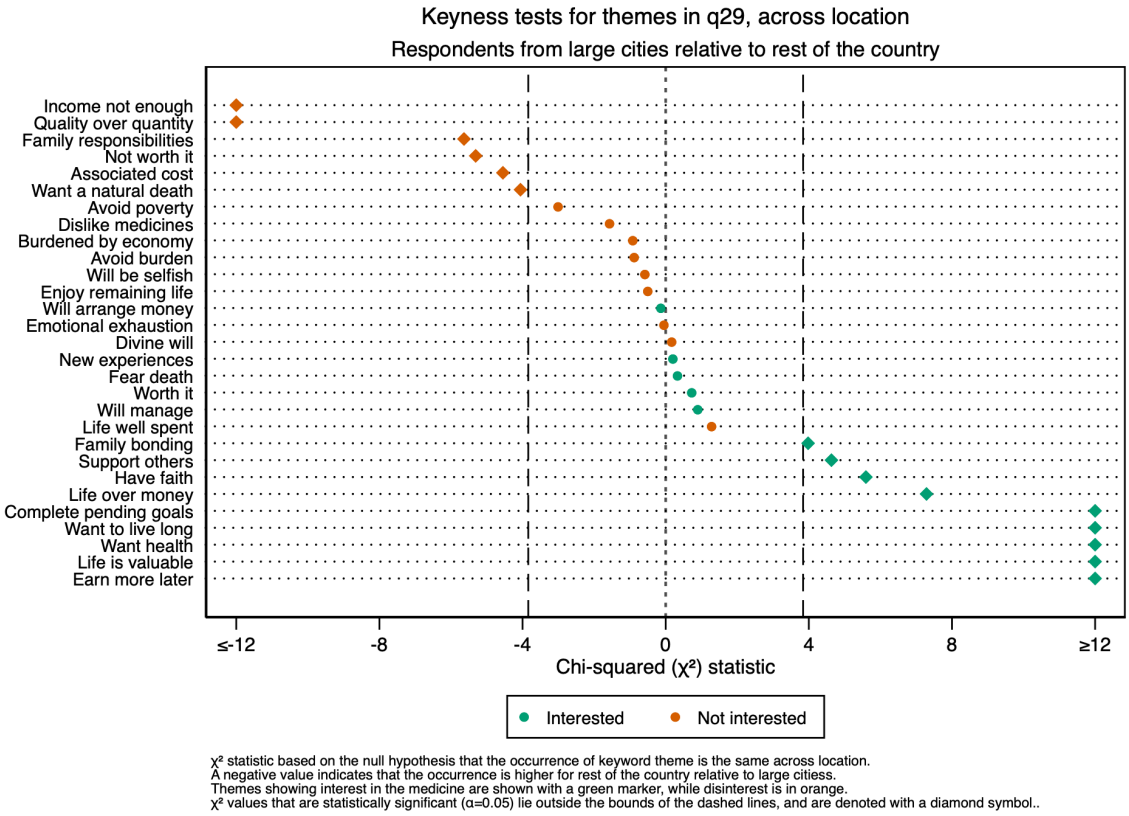
Notes: This figure shows the relative frequency of keywords by marital status, where a positive test statistic indicates that the keyword is more frequent among those who are married, while a negative statistic indicates higher frequency among those who are not married.

Figure A.13: Differences in frequency of qualitative responses by parental status



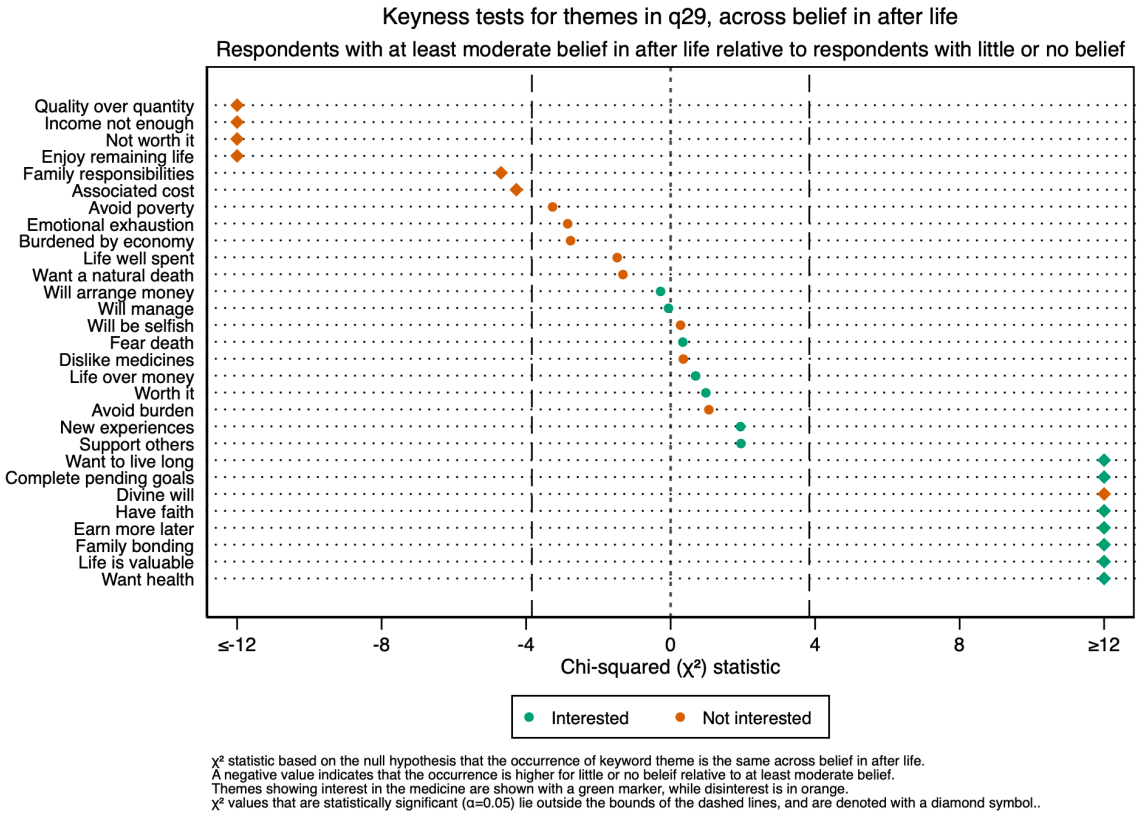
Notes: This figure shows the relative frequency of keywords by parental status, where a positive test statistic indicates that the keyword is more frequent among respondents with children, while a negative statistic indicates higher frequency among respondents without children.

Figure A.14: Differences in frequency of qualitative responses by location



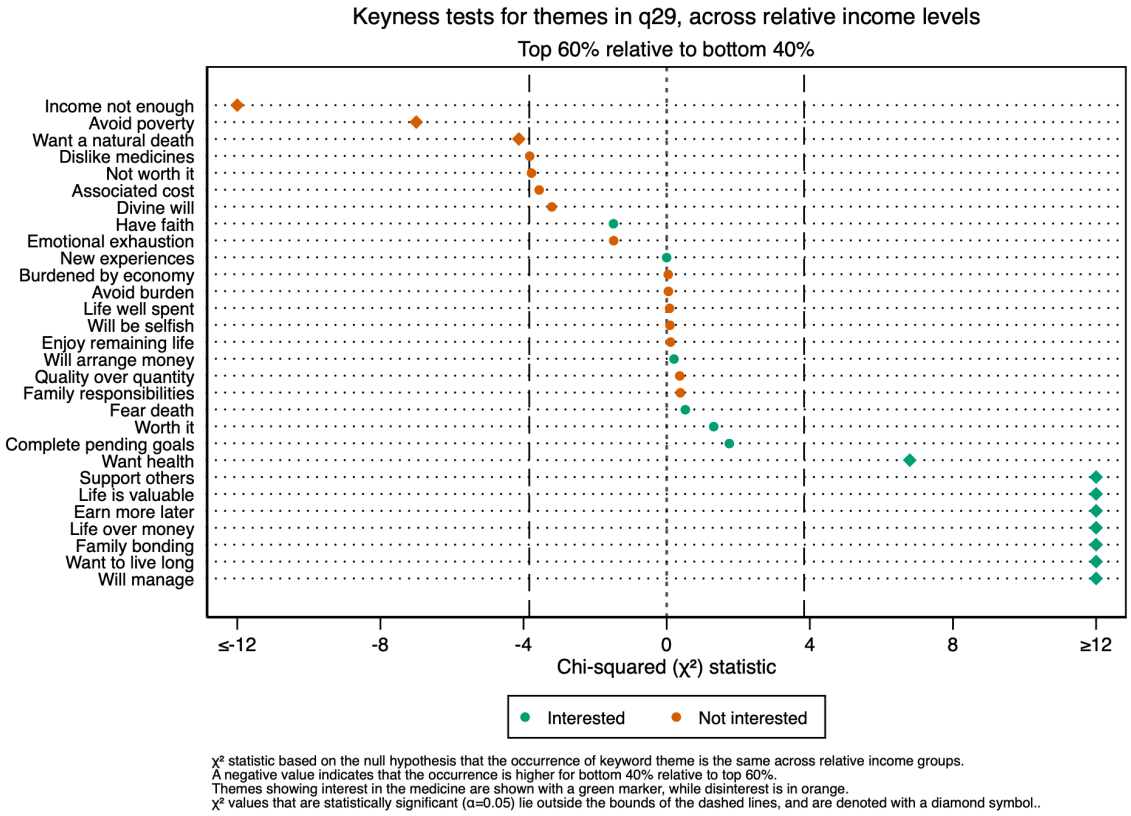
Notes: This figure shows the relative frequency of keywords by location, where a positive test statistic indicates that the keyword is more frequent among those in large cities, while a negative statistic indicates higher frequency among those in the rest of the country.

Figure A.15: Differences in frequency of qualitative responses by belief in the afterlife



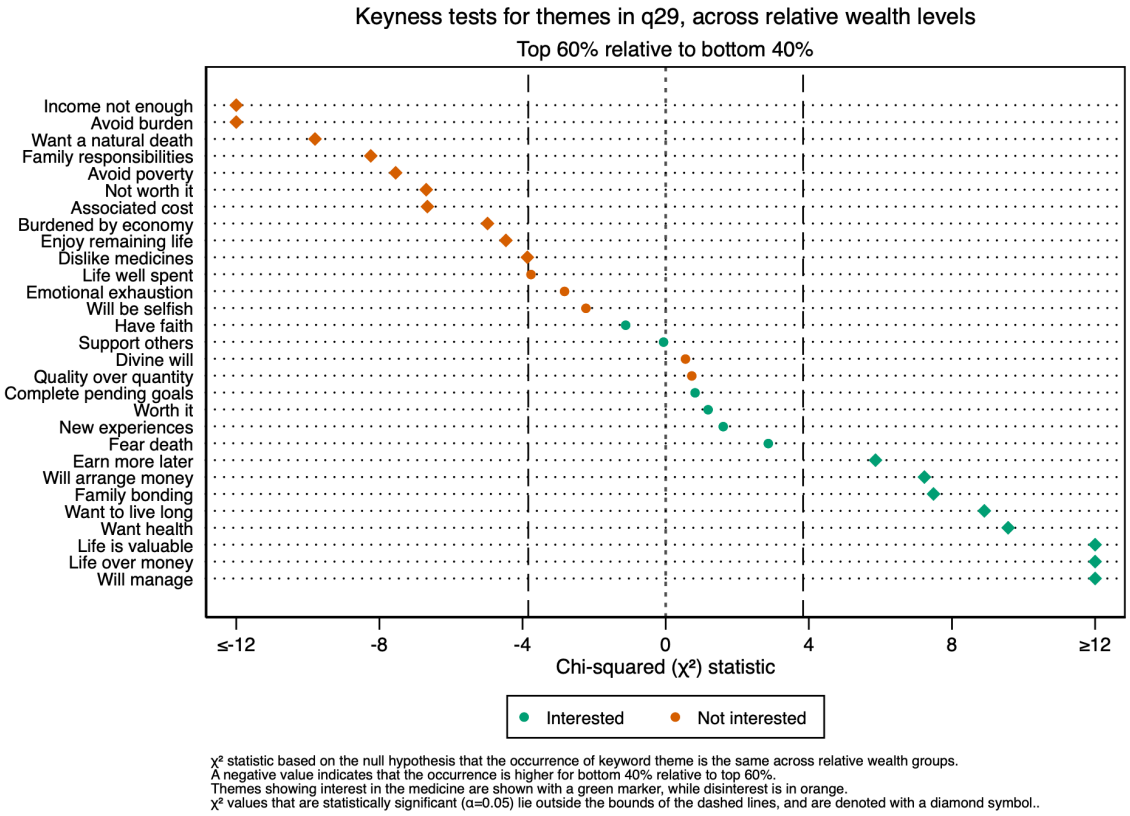
Notes: This figure shows the relative frequency of keywords by belief in the afterlife, where a positive test statistic indicates that the keyword is more frequent among those who believe in the afterlife, while a negative statistic indicates higher frequency among those who do not.

Figure A.16: Differences in frequency of qualitative responses by income level



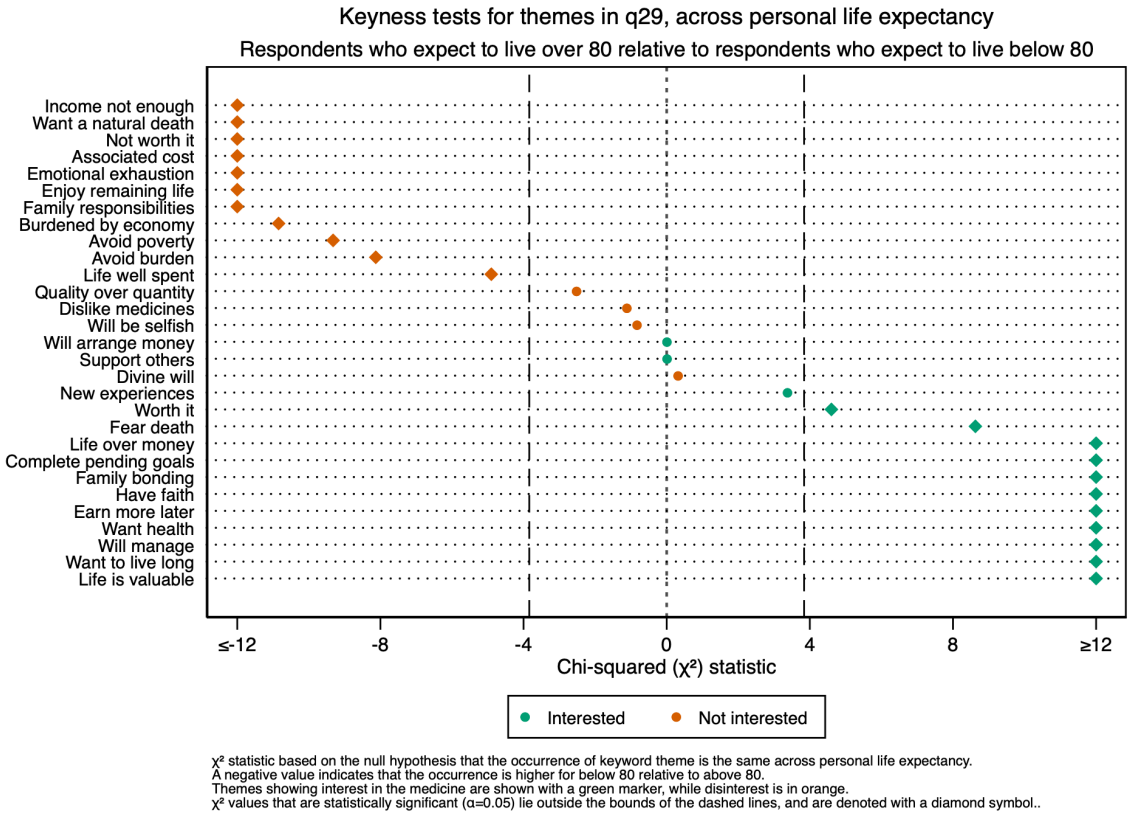
Notes: This figure shows the relative frequency of keywords by income level, where a positive test statistic indicates that the keyword is more frequent among richer respondents, while a negative statistic indicates higher frequency among poorer respondents.

Figure A.17: Differences in frequency of qualitative responses by perceived wealth level



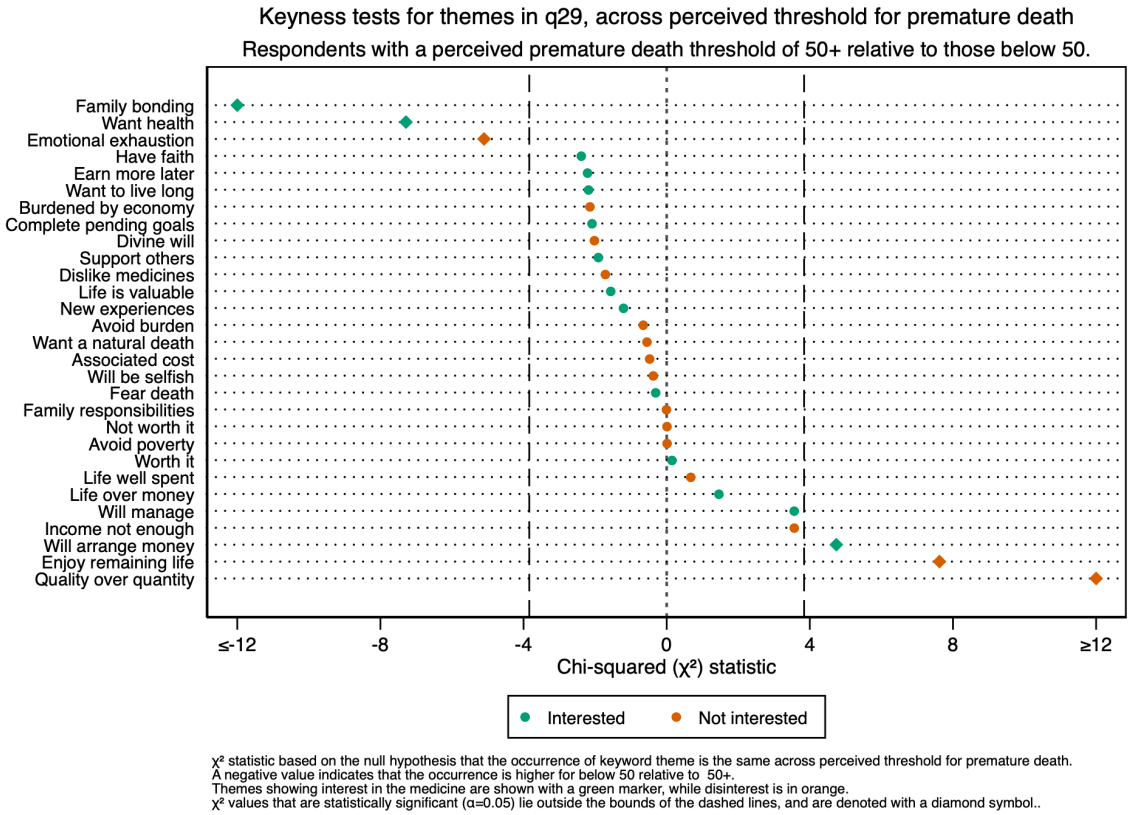
Notes: This figure shows the relative frequency of keywords by perceived wealth level, where a positive test statistic indicates that the keyword is more frequent among those who perceive they have relatively higher wealth levels, while a negative statistic indicates higher frequency among those who perceive they have relatively lower wealth levels.

Figure A.18: Differences in frequency of qualitative responses by personal life expectancy



Notes: This figure shows the relative frequency of keywords by personal life expectancy, where a positive test statistic indicates that the keyword is more frequent among those who perceive they will live 80 or more years, while a negative statistic indicates higher frequency among those who perceive they will live less than 80 years.

Figure A.19: Differences in frequency of qualitative responses by perceived threshold for premature death



Notes: This figure shows the relative frequency of keywords by perceived threshold for premature death, where a positive test statistic indicates that the keyword is more frequent among those who perceive a premature death is 50 or more years, while a negative statistic indicates higher frequency among those who perceive a premature death is less than 50 years.

A.5 Details about Estimates of Poverty-Year Impacts from Fossil Fuel Subsidy Removal

This section provides a transparent derivation of the estimate that removing energy subsidies without compensation would generate approximately 150 million additional poverty years globally per year. The purpose of this exercise is not to produce a precise forecast, but rather to establish a conservative, order-of-magnitude benchmark suitable for welfare accounting.

A.5.1 Energy Price Increases from Subsidy Removal

Estimates from the IMF suggest that removing explicit fossil fuel subsidies typically raises retail energy prices by approximately 10-20 percent on average, with substantial cross-country heterogeneity (IMF, 2025). To remain conservative, we assume an effective household-level energy price increase of 15 percent following subsidy removal.

A.5.2 Household Exposure to Energy Prices

Household survey evidence indicates that households near the poverty threshold devote a non-trivial share of total expenditure to energy, both directly (electricity, cooking fuel, transport fuel) and indirectly through energy-intensive goods such as food and transportation. Across low- and middle-income countries, direct energy expenditures typically account for 6-10 percent of household budgets, with indirect energy costs contributing an additional 4–6 percent (World Bank, 2015; Coady et al., 2017). We therefore assume that 15 percent of total household expenditure is effectively exposed to energy price changes, which lies at the lower end of the range used in the fuel subsidy reform literature.

A.5.3 Real Consumption Shock

Combining the assumed energy price increase with household expenditure shares implies an average real consumption loss for vulnerable households of approximately:

$$0.15 \times 0.15 \approx 2.25\%.$$

Thus, absent compensation, households near the Societal Poverty Line (SPL) experience a decline in real consumption of roughly 2-3 percent.

A.5.4 Poverty Elasticity

A large empirical literature documents that headcount poverty responds elastically to changes in mean consumption or income. Estimates of the elasticity of poverty with respect to mean consumption typically range between 1 and 2, depending on the poverty line

and country group (Ravallion, 2001; Bourguignon, 2003; World Bank, 2022). To remain conservative, we adopt a midpoint elasticity of 1.5. Applying this elasticity implies that a 2.5 percent decline in real consumption increases poverty headcounts by approximately 3-4 percent.

A.5.5 Population Affected

Applying this increase to countries with substantial fossil fuel subsidies and large vulnerable populations implies that roughly 150 million individuals fall below the Societal Poverty Line following subsidy removal in the absence of compensation. This magnitude is modest relative to poverty increases observed during large macroeconomic shocks and is well within the range reported during recent energy price crises and economic downturns. This estimate of 150 million poverty-years aligns the calculation with the welfare framework used in the main text and facilitates comparison with cumulative life-years saved.

A.5.6 Duration of Poverty Impacts

Crucially, we do not assume that individuals remain poor permanently. Instead, we assume that poverty impacts persist for an average duration of one year. This is conservative relative to assumptions used in some macro-poverty projections.

A.5.7 Interpretation

These assumptions are intentionally conservative and are designed to illustrate the magnitude of short-term poverty impacts relevant for political feasibility and transitional policy design. The calculations abstract from longer-term poverty reductions arising from climate mitigation itself, including avoided damages to growth, health, and agricultural productivity. Incorporating these channels would further reduce the net poverty costs of subsidy reform.

A.6 Full survey instruments for wave 1 and 2

Survey

1. Thank you for your interest in this short survey which has been commissioned to YouGov by the International Bank for Reconstruction and Development and the University of Antwerp. Your responses will be kept confidential and only be used for research purposes. Your personal data will not be shared with third parties without your consent. All the analysis will be based on an anonymized dataset. Your participation in this survey is completely voluntary and you may decline to take part without providing an explanation. If there are any questions that you do not wish to answer, you can choose not to answer them and exit the survey. The survey will take about 10 minutes. [For more detailed information about this study, click here]

Do you agree to participate? *

- Yes, I will complete the survey
- No, thanks

2. What is your age? *

- Under 18 years
- 18-24 years
- 25-34 years
- 35 years or older

3. What is your exact age (in years) today? *

18 99

(untitled)

4. What is your gender? *

- Male
- Female

(untitled)

5. What is the highest level of education you have completed? *

- No education
- Primary
- Secondary
- Higher than secondary but not university
- University

(untitled)

6. Where do you live? *

- Large city (More than 1 million inhabitants)
- Small city or town (10,000-1,000,000 inhabitants)
- Small town or rural area (Less than 10,000 inhabitants)

(untitled)

7. What is your relationship status? *

Single Partner Married Divorced Widowed

(untitled)

8. Including yourself, how many people live in your home? *

1 2 3 4 5 6 7 8+

(untitled)

9. How many children do you have?
*

- None
- 1
- 2
- 3
- 4
- 5+

(untitled)

10. Imagine the total population of the United States is divided into 5 income groups from poorest to richest, each with the same number of people. In which of these income groups do you place your household?
*

- Poorest group
- 2nd poorest group
- Middle group
- 2nd richest group
- Richest group

(untitled)

11.
What was the annual income of your household in 2023 (before tax)?
*

- 15,500 or less
- 15,501-25,000
- 25,001-36,500
- 36,501-55,500
- 55,501-76,500
- 76,501 and more

12. What was the annual income of your household in 2023 (before tax)?*

- Below 39,501
- 39,501-50,000
- 50,001-73,000
- 73,001-111,500
- 111,501-152,500
- 152,501 and more

13. What was the annual income of your household in 2023 (before tax)?*

- Below 47,501
- 47,501-75,000
- 75,001-109,500
- 109,501-167,500
- 167,501-229,000
- 229,001 and more

14. What was the annual income of your household in 2023 (before tax)?*

- Below 63,500
- 63,500-100,000
- 100,001-146,000
- 146,001-223,500
- 223,501-305,500
- 305,501 and more

15. What was the annual income of your household in 2023 (before tax)?*

- Below 79,501
- 79,501-125,500
- 125,501-183,000
- 183,001-279,500
- 279,501-382,000
- 382,001 and more

16. What was the annual income of your household in 2023 (before tax)?*

- Below 95,501
- 95,501-150,500
- 150,501-219,500
- 219,501-335,500
- 335,501-458,000
- 458,001 and more

17. What was the annual income of your household in 2023 (before tax)?*

- Below 111,500
- 111,501-175,500
- 175,501-256,000
- 256,001-391,500
- 391,501 -534,500
- 534,501 and more

18. What was the annual income of your household in 2023 (before tax)?*

- Below 127,500
- 127,501-200,500
- 200,501-292,500
- 292,501-447,500
- 447,501-610,800
- 610,801 and more

(untitled)

19. In the remainder of the survey, when you are asked about “your current income” this refers to “your current total household income” *

- I understand

---

20. How often do you feel positive about your life? *

- Never
- Rarely
- Sometimes
- Often
- Always

(untitled)

---

21. How much do you believe that you will live some kind of life after your death, like, for instance, going to heaven or re-incarnating? *

- Not at all
- A little
- Moderately
- A lot
- A great deal

(untitled)

---

22. Approximately what age do you think that you will live until? *

18 99

(untitled)

---

23. What is the oldest age below which you would consider someone's death to be "too early"? *

18 99

(untitled)

24. Before proceeding, please confirm that you will answer the remaining survey questions. This should only take around three to four minutes. If you cannot complete the survey, please indicate so below. *

- Yes, I will complete the remaining survey questions
- No thanks

(untitled)

25. Please carefully examine the information below:

The following images provide examples of two households in the USA. The income of the people living in the home shown in the first picture is **around half the income** of the people living in the home shown in the second picture.

Poorer household

Richer household

This information is sourced from Gapminder, which is an independent educational non-profit organization.
*

- Click to continue

(untitled)

26. Please select which household has **half the income** of the other household? *





---

27. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='146'] years? *

- Not interested at all
- Potentially interested
- Definitely interested

---

28. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='146'] years, but whose cost implies you will have to live on **half** of your current income for the rest of your life? *

- Not interested at all
- Potentially interested
- Definitely interested

(untitled)

29. Please briefly explain what is the **main reason** you stated you are "[question('value'), id='133']" in taking this medicine that would allow you to live for beyond [question('value'), id='146'] years, but whose cost implies you will live on **half** of your current income for the rest of your life. *

30. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='199'] years? *

- Not interested at all
- Potentially interested
- Definitely interested

31. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='199'] years, but whose cost implies you will have to live on **half** of your current income for the rest of your life? *

- Not interested at all
- Potentially interested
- Definitely interested

(untitled)

32. Please briefly explain what is the **main reason** you stated you are "[question('value'), id='230']" in taking this medicine that would allow you to live for beyond [question('value'), id='199'] years, but whose cost implies you will live on **half** of your current income for the rest of your life. *

33. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='211'] years? *

- Not interested at all
- Potentially interested
- Definitely interested

34. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='211'] years, but whose cost implies you will have to live on **half** of your current income for the rest of your life? *

- Not interested at all
- Potentially interested
- Definitely interested

(untitled)

35. Please briefly explain what is the **main reason** you stated you are "[question('value'), id='234']" in taking this medicine that would allow you to live for beyond [question('value'), id='211'] years, but whose cost implies you will live on **half** of your current income for the rest of your life. *

36. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='214'] years? *

- Not interested at all
- Potentially interested
- Definitely interested

37. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='214'] years, but whose cost implies you will have to live on **half** of your current income for the rest of your life? *

- Not interested at all
- Potentially interested
- Definitely interested

(untitled)

38. Please briefly explain what is the **main reason** you stated you are "[question('value'), id='238']" in taking this medicine that would allow you to live for beyond [question('value'), id='214'] years, but whose cost implies you will live on **half** of your current income for the rest of your life. *

39. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='150'] years on **half** your current income? *

- Live until age of [question('value'), id='150'] years on**half** of your current income
- Live until age of [question("value"), id="146"] years on your current income

40. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='375'] years on **half** your current income? *

- Live until age of [question("value"), id="146"] years on your current income
- Live until age of [question('value'), id='375'] years on**half** of your current income

---

41. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='378'] years on **half** your current income? *

- Live until age of [question('value'), id='378'] years on**half** of your current income
- Live until age of [question("value"), id="146"] years on your current income

---

42. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='205'] years on **half** your current income? *

- Live until age of [question('value'), id='205'] years on**half** of your current income
- Live until age of [question("value"), id="199"] years on your current income

---

43. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='381'] years on **half** your current income? *

- Live until age of [question('value'), id='381'] years on**half** of your current income
- Live until age of [question("value"), id="199"] years on your current income

---

44. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='384'] years on **half** your current income? *

- Live until age of [question("value"), id="199"] years on your current income
- Live until age of [question('value'), id='384'] years on**half** of your current income

---

45. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='202'] years on **half** your current income? *

- Live until age of [question("value"), id="146"] years on your current income
- Live until age of [question('value'), id='202'] years on**half** of your current income

---

46. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='150'] years on **half** your current income? *

- Live until age of [question("value"), id="146"] years on your current income
- Live until age of [question('value'), id='150'] years on**half** of your current income

---

47. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='387'] years on **half** your current income? *

- Live until age of [question('value'), id='387'] years on**half** of your current income
- Live until age of [question("value"), id="146"] years on your current income

---

48. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='208'] years on **half** your current income? *

- Live until age of [question('value'), id='208'] years on**half** of your current income
- Live until age of [question("value"), id="199"] years on your current income

---

49. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='205'] years on **half** your current income? *

- Live until age of [question("value"), id="199"] years on your current income
- Live until age of [question('value'), id='205'] years on**half** of your current income

---

50. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='390'] years on **half** your current income? *

- Live until age of [question('value'), id='390'] years on**half** of your current income
- Live until age of [question("value"), id="199"] years on your current income

---

51. Would you prefer to live untreated until the age of [question('value'), id='211'] years on your current income or to take the medicine and live until the age of [question('value'), id='217'] years on **half** your current income? *

- Live until age of [question('value'), id='217'] years on**half** of your current income
- Live until age of [question("value"), id="211"] years on your current income

---

52. Would you prefer to live untreated until the age of [question('value'), id='211'] years on your current income or to take the medicine and live until the age of [question('value'), id='393'] years on **half** your current income? *

- Live until age of [question("value"), id="211"] years on your current income
- Live until age of [question('value'), id='393'] years on**half** of your current income

---

53. Would you prefer to live untreated until the age of [question('value'), id='211'] years on your current income or to take the medicine and live until the age of [question('value'), id='396'] years on **half** your current income? *

- Live until age of [question('value'), id='396'] years on**half** of your current income
- Live until age of [question("value"), id="211"] years on your current income

---

54. Would you prefer to live untreated until the age of [question('value'), id='214'] years on your current income or to take the medicine and live until the age of [question('value'), id='220'] years on **half** your current income? *

- Live until age of [question('value'), id='220'] years on**half** of your current income
- Live until age of [question("value"), id="214"] years on your current income

---

55. Would you prefer to live untreated until the age of [question('value'), id='214'] years on your current income or to take the medicine and live until the age of [question('value'), id='399'] years on **half** your current income? *

- Live until age of [question("value"), id="214"] years on your current income
- Live until age of [question('value'), id='399'] years on**half** of your current income

---

56. Would you prefer to live untreated until the age of [question('value'), id='214'] years on your current income or to take the medicine and live until the age of [question('value'), id='402'] years on **half** your current income? *

- Live until age of [question('value'), id='402'] years on**half** of your current income
- Live until age of [question("value"), id="214"] years on your current income

---

57. Would you prefer to live untreated until the age of [question('value'), id='211'] years on your current income or to take the medicine and live until the age of [question('value'), id='223'] years on **half** your current income? *

- Live until age of [question('value'), id='223'] years on**half** of your current income
- Live until age of [question("value"), id="211"] years on your current income

---

58. Would you prefer to live untreated until the age of [question('value'), id='211'] years on your current income or to take the medicine and live until the age of [question('value'), id='217'] years on **half** your current income? *

- Live until age of [question('value'), id='217'] years on**half** of your current income
- Live until age of [question("value"), id="211"] years on your current income

---

59. Would you prefer to live untreated until the age of [question('value'), id='211'] years on your current income or to take the medicine and live until the age of [question('value'), id='405'] years on **half** your current income? *

- Live until age of [question('value'), id='405'] years on**half** of your current income
- Live until age of [question("value"), id="211"] years on your current income

---

60. Would you prefer to live untreated until the age of [question('value'), id='214'] years on your current income or to take the medicine and live until the age of [question('value'), id='226'] years on **half** your current income? *

- Live until age of [question("value"), id="214"] years on your current income
- Live until age of [question('value'), id='226'] years on**half** of your current income

---

61. Would you prefer to live untreated until the age of [question('value'), id='214'] years on your current income or to take the medicine and live until the age of [question('value'), id='220'] years on **half** your current income? *

- Live until age of [question("value"), id="214"] years on your current income
- Live until age of [question('value'), id='220'] years on**half** of your current income

---

62. Would you prefer to live untreated until the age of [question('value'), id='214'] years on your current income or to take the medicine and live until the age of [question('value'), id='408'] years on **half** your current income? *

- Live until age of [question('value'), id='408'] years on**half** of your current income
- Live until age of [question("value"), id="214"] years on your current income

(untitled)

63. What was the main motive guiding your answers when asked whether you would take a medicine that increases your lifespan but at the cost of half your income?

- Life is not worth living on half your income
- Taking such costly medicine is only worth it if your lifespan is sufficiently increased
- Other

(untitled)

64. The World Bank considers someone in the USA to be poor if they live in a household with less than $16,800 per person per year in 2024.

This is based on a "Societal Poverty Line," which provides a standardized measure of national poverty in each country. *

- Click to continue

(untitled)

65. Please carefully examine the information below:

The following image shows an example of a home of people **living below the poverty line** in the USA.

This information is sourced from Gapminder, which is an independent educational non-profit organization.
*

- Click to continue

(untitled)

66. Approximately, what do you think the annual income is of the people living in the household below?

*

67. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='146'] years, but whose cost implies you will have to **live below the poverty line** for the rest of your life? *

- Not interested at all
- Potentially interested
- Definitely interested

(untitled)

68. Please briefly explain what is the **main reason** you stated you are "[question('value'), id='166']" in taking this medicine that would allow you to live for beyond [question('value'), id='146'] years, but whose cost implies you will **live below the poverty line** for the rest of your life. *

69. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='199'] years, but whose cost implies you will have to **live below the poverty line** for the rest of your life? *

- Not interested at all
- Potentially interested
- Definitely interested

(untitled)

70. Please briefly explain what is the **main reason** you stated you are "[question('value'), id='275']" in taking this medicine that would allow you to live for beyond [question('value'), id='199'] years, but whose cost implies you will **live below the poverty line** for the rest of your life. *

71. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='211'] years, but whose cost implies you will have to **live below the poverty line** for the rest of your life? *

- Not interested at all
- Potentially interested
- Definitely interested

(untitled)

72. Please briefly explain what is the **main reason** you stated you are "[question('value'), id='277']" in taking this medicine that would allow you to live for beyond [question('value'), id='211'] years, but whose cost implies you will **live below the poverty line** for the rest of your life. *

73. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='214'] years, but whose cost implies you will have to **live below the poverty line** for the rest of your life? *

- Not interested at all
- Potentially interested
- Definitely interested

(untitled)

74. Please briefly explain what is the **main reason** you stated you are "[question('value'), id='279']" in taking this medicine that would allow you to live for beyond [question('value'), id='214'] years, but whose cost implies you will **live below the poverty line** for the rest of your life. *

75. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your **current income** or to take the medicine and live until the age of [question('value'), id='150'] years in **poverty**? *

- Live until age of [question('value'), id='146'] years on your **current income**
- Live until age of [question('value'), id='150'] years in **poverty**

76. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='375'] years in **poverty**? *

- Live until age of [question('value'), id='375'] years in **poverty**
- Live until age of [question("value"), id="146"] years on your current income

77. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='378'] years in **poverty**? *

- Live until age of [question('value'), id='378'] years in **poverty**
- Live until age of [question("value"), id="146"] years on your current income

78. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your **current income** or to take the medicine and live until the age of [question('value'), id='205'] years in **poverty**? *

- Live until age of [question('value'), id='205'] years in **poverty**
- Live until age of [question('value'), id='199'] years on your **current income**

---

79. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='381'] years in **poverty**? *

- Live until age of [question("value"), id="199"] years on your current income
- Live until age of [question('value'), id='381'] years in **poverty**

---

80. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='384'] years in **poverty**? *

- Live until age of [question("value"), id="199"] years on your current income
- Live until age of [question('value'), id='384'] years in **poverty**

---

81. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your **current income** or to take the medicine and live until the age of [question('value'), id='202'] years in **poverty**? *

- Live until age of [question('value'), id='202'] years in **poverty**
- Live until age of [question('value'), id='146'] years on your **current income**

---

82. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='150'] years in **poverty**? *

- Live until age of [question('value'), id='150'] years in **poverty**
- Live until age of [question("value"), id="146"] years on your current income

---

83. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='387'] years in **poverty**? *

- Live until age of [question('value'), id='387'] years in **poverty**
- Live until age of [question("value"), id="146"] years on your current income

---

84. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your **current income** or to take the medicine and live until the age of [question('value'), id='208'] years in **poverty**? *

- Live until age of [question('value'), id='208'] years in **poverty**
- Live until age of [question('value'), id='199'] years on your **current income**

---

85. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='205'] years in **poverty**? *

- Live until age of [question('value'), id='205'] years in **poverty**
- Live until age of [question("value"), id="199"] years on your current income

---

86. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='390'] years in **poverty**? *

- Live until age of [question('value'), id='390'] years in **poverty**
- Live until age of [question("value"), id="199"] years on your current income

---

87. Would you prefer to live untreated until the age of [question('value'), id='211'] years on your **current income** or to take the medicine and live until the age of [question('value'), id='217'] years in **poverty**? *

- Live until age of [question('value'), id='217'] years in **poverty**
- Live until age of [question('value'), id='211'] years on your **current income**

---

88. Would you prefer to live untreated until the age of [question('value'), id='211'] years on your current income or to take the medicine and live until the age of [question('value'), id='393'] years in **poverty**? *

- Live until age of [question("value"), id="211"] years on your current income
- Live until age of [question('value'), id='393'] years in **poverty**

---

89. Would you prefer to live untreated until the age of [question('value'), id='211'] years on your current income or to take the medicine and live until the age of [question('value'), id='396'] years in **poverty**? *

- Live until age of [question("value"), id="211"] years on your current income
- Live until age of [question('value'), id='396'] years in **poverty**

---

90. Would you prefer to live untreated until the age of [question('value'), id='214'] years on your **current income** or to take the medicine and live until the age of [question('value'), id='220'] years in **poverty**? *

- Live until age of [question('value'), id='220'] years in **poverty**
- Live until age of [question('value'), id='214'] years on your **current income**

---

91. Would you prefer to live untreated until the age of [question('value'), id='214'] years on your current income or to take the medicine and live until the age of [question('value'), id='399'] years in **poverty**? *

- Live until age of [question('value'), id='399'] years in **poverty**
- Live until age of [question("value"), id="214"] years on your current income

---

92. Would you prefer to live untreated until the age of [question('value'), id='214'] years on your current income or to take the medicine and live until the age of [question('value'), id='402'] years in **poverty**? *

- Live until age of [question('value'), id='402'] years in **poverty**
- Live until age of [question("value"), id="214"] years on your current income

---

93. Would you prefer to live untreated until the age of [question('value'), id='211'] years on your **current income** or to take the medicine and live until the age of [question('value'), id='223'] years in **poverty**? *

- Live until age of [question('value'), id='223'] years in **poverty**
- Live until age of [question('value'), id='211'] years on your **current income**

---

94. Would you prefer to live untreated until the age of [question('value'), id='211'] years on your current income or to take the medicine and live until the age of [question('value'), id='217'] years in **poverty**? *

- Live until age of [question('value'), id='217'] years in **poverty**
- Live until age of [question("value"), id="211"] years on your current income

---

95. Would you prefer to live untreated until the age of [question('value'), id='211'] years on your current income or to take the medicine and live until the age of [question('value'), id='405'] years in **poverty**? *

- Live until age of [question('value'), id='405'] years in **poverty**
- Live until age of [question("value"), id="211"] years on your current income

---

96. Would you prefer to live untreated until the age of [question('value'), id='214'] years on your **current income** or to take the medicine and live until the age of [question('value'), id='226'] years in **poverty**? *

- Live until age of [question('value'), id='226'] years in **poverty**
- Live until age of [question('value'), id='214'] years on your **current income**

---

97. Would you prefer to live untreated until the age of [question('value'), id='214'] years on your current income or to take the medicine and live until the age of [question('value'), id='220'] years in **poverty**? *

- Live until age of [question('value'), id='220'] years in **poverty**
- Live until age of [question("value"), id="214"] years on your current income

---

98. Would you prefer to live untreated until the age of [question('value'), id='214'] years on your current income or to take the medicine and live until the age of [question('value'), id='408'] years in **poverty**? *

- Live until age of [question("value"), id="214"] years on your current income
- Live until age of [question('value'), id='408'] years in **poverty**

(untitled)

---

99. What was the main motive guiding your answers when asked whether you would take a medicine that increases your lifespan but at the cost of living in poverty?

- Life is not worth living in poverty
- Taking such costly medicine is only worth it if your lifespan is sufficiently increased
- Other

---

100. Please select which household has **half the income** of the other household? *





(untitled)

101. Approximately, what do you think the total annual income is of the people living in the household below?

*

102. Do you feel that this survey was biased? (Optional)

- Yes
- No
- Unsure

(untitled)

103. Please feel free to give us any feedback, comments or thoughts you have regarding this survey in the field below. (Optional)

FY25_USA pilot

1. Thank you for your interest in this short survey which has been commissioned to YouGov by the International Bank for Reconstruction and Development and the University of Antwerp. Your responses will be kept confidential and only be used for research purposes. Your personal data will not be shared with third parties without your consent. All the analysis will be based on an anonymized dataset. Your participation in this survey is completely voluntary and you may decline to take part without providing an explanation. If there are any questions that you do not wish to answer, you can choose not to answer them and exit the survey. The survey will take about 10 minutes. [For more detailed information about this study, click here]

Do you agree to participate? *

- Yes, I will complete the survey
- No, thanks

2. What is your age? *

- Under 18 years
- 18-24 years
- 25-34 years
- 35 years or older

3. What is your exact age (in years) today? *

18 99

(untitled)

4. What is your gender? *

- Male
- Female

(untitled)

5. What is the highest level of education you have completed? *

- No education
- Primary
- Secondary
- Higher than secondary but not university
- University

(untitled)

6. Where do you live? *

- Large city (More than 1 million inhabitants)
- Small city or town (10,000-1,000,000 inhabitants)
- Small town or rural area (Less than 10,000 inhabitants)

(untitled)

7. What is your relationship status? *

- Single
- Partner
- Married
- Divorced
- Widowed

(untitled)

8. Including yourself, how many people live in your home? *

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8+

(untitled)

9. How many children do you have? *

- None
- 1
- 2
- 3
- 4
- 5+

(untitled)

10. Imagine the total population of the United States is divided into 5 income groups from poorest to richest, each with the same number of people. In which of these income groups do you place your household?
*

- Poorest group
- 2nd poorest group
- Middle group
- 2nd richest group
- Richest group

(untitled)

11.
What was the annual income of your household in 2024 (before tax)?
*

- 16,000 or less
- 16,001-26,000
- 26,001-37,500
- 37,501-57,000
- 57,001-79,000
- 79,001 and more

12. What was the annual income of your household in 2024 (before tax)?*

- Below 40,501
- 40,501-51,500
- 51,501-75,000
- 75,001-115,000
- 115,001-157,000
- 157,001 and more

13. What was the annual income of your household in 2024 (before tax)?*

- Below 49,001
- 49,001-77,000
- 77,001-113,000
- 113,001-172,500
- 172,501-236,000
- 236,001 and more

14. What was the annual income of your household in 2024 (before tax)?*

- Below 65,500
- 65,500-103,000
- 103,001-150,000
- 150,001-230,500
- 230,501-314,500
- 314,501 and more

15. What was the annual income of your household in 2024 (before tax)?*

- Below 82,001
- 82,001-129,500
- 129,501-188,500
- 188,501-288,000
- 288,001-393,500
- 393,501 and more

16. What was the annual income of your household in 2024 (before tax)?*

- Below 98,501
- 98,501-155,000
- 155,001-226,000
- 226,001-345,500
- 345,501-472,000
- 472,001 and more

17. What was the annual income of your household in 2024 (before tax)?*

- Below 115,000
- 115,001-181,000
- 181,001-263,500
- 263,501-403,500
- 403,501 -550,500
- 550,501 and more

18. What was the annual income of your household in 2024 (before tax)?*

- Below 131,500
- 131,501-206,500
- 206,501-301,500
- 301,501-461,000
- 461,001-629,000
- 629,001 and more

(untitled)

19. In the remainder of the survey, when you are asked about “your current income” this refers to “your current total household income” *

- I understand

20. Overall, how satisfied are you with your life?

Please answer on a scale of 0 to 10, where 0 is “not at all” and 10 is “completely satisfied”. *

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

(untitled)

21. How much do you believe that you will live some kind of life after your death, like, for instance, going to heaven or re-incarnating? *

- Not at all
- A little
- Moderately
- A lot
- A great deal

(untitled)

22. Approximately what age do you think that you will live until? *

18 — 99

(untitled)

23. What is the oldest age below which you would consider someone's death to be "too early"? *

18 — 99

(untitled)

24. Before proceeding, please confirm that you will answer the remaining survey questions. This should only take around three to four minutes. If you cannot complete the survey, please indicate so below. *

- Yes, I will complete the remaining survey questions
- No thanks

(untitled)

25. You are about to be asked a series of five related questions, and you need to really think about your choices. *

- Click to continue

---

26. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='146'] years? *

- Not interested at all
- Potentially interested
- Definitely interested

---

27. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='146'] years, but whose cost implies you will have to live on **half** of your current income for the rest of your life? *

- Not interested at all
- Potentially interested
- Definitely interested

---

28. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='199'] years? *

- Not interested at all
- Potentially interested
- Definitely interested

---

29. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='199'] years, but whose cost implies you will have to live on **half** of your current income for the rest of your life? *

- Not interested at all
- Potentially interested
- Definitely interested

---

30. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='150'] years on **half** your current income? *

- Live until age of [question("value"), id="146"] years on your current income
- Live until age of [question('value'), id='150'] years on**half** of your current income

---

31. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='375'] years on **half** your current income? *

- Live until age of [question("value"), id="146"] years on your current income
- Live until age of [question('value'), id='375'] years on**half** of your current income

---

32. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='378'] years on **half** your current income? *

- Live until age of [question('value'), id='378'] years on**half** of your current income
- Live until age of [question("value"), id="146"] years on your current income

---

33. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='491'] years on **half** your current income? *

- Live until age of [question('value'), id='491'] years on**half** of your current income
- Live until age of [question("value"), id="146"] years on your current income

---

34. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='205'] years on **half** your current income? *

- Live until age of [question('value'), id='205'] years on**half** of your current income
- Live until age of [question("value"), id="199"] years on your current income

---

35. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='381'] years on **half** your current income? *

- Live until age of [question("value"), id="199"] years on your current income
- Live until age of [question('value'), id='381'] years on**half** of your current income

---

36. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='384'] years on **half** your current income? *

- Live until age of [question('value'), id='384'] years on**half** of your current income
- Live until age of [question("value"), id="199"] years on your current income

---

37. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='494'] years on **half** your current income? *

- Live until age of [question('value'), id='494'] years on**half** of your current income
- Live until age of [question("value"), id="199"] years on your current income

---

38. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='202'] years on **half** your current income? *

- Live until age of [question('value'), id='202'] years on**half** of your current income
- Live until age of [question("value"), id="146"] years on your current income

---

39. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='150'] years on **half** your current income? *

- Live until age of [question("value"), id="146"] years on your current income
- Live until age of [question('value'), id='150'] years on**half** of your current income

---

40. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='150'] years on **half** your current income? *

- Live until age of [question("value"), id="146"] years on your current income
- Live until age of [question('value'), id='150'] years on**half** of your current income

---

41. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='202'] years on **half** your current income? *

- Live until age of [question("value"), id="146"] years on your current income
- Live until age of [question('value'), id='202'] years on**half** of your current income

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42. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='494'] years on **half** your current income? *

- Live until age of [question('value'), id='494'] years on**half** of your current income
- Live until age of [question("value"), id="199"] years on your current income

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43. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='208'] years on **half** your current income? *

- Live until age of [question('value'), id='208'] years on**half** of your current income
- Live until age of [question("value"), id="199"] years on your current income

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44. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='208'] years on **half** your current income? *

- Live until age of [question("value"), id="199"] years on your current income
- Live until age of [question('value'), id='208'] years on**half** of your current income

---

45. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='494'] years on **half** your current income? *

- Live until age of [question('value'), id='494'] years on**half** of your current income
- Live until age of [question("value"), id="199"] years on your current income

(untitled)

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46. What was the main motive guiding your answers when asked whether you would take a medicine that increases your lifespan but at the cost of half your income?

- Life is not worth living on half your income
- Taking such costly medicine is only worth it if your lifespan is sufficiently increased
- Other

(untitled)

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47. The World Bank considers someone in the USA to be poor if they live in a household with less than $16,800 per person per year in 2024.

This is based on a "Societal Poverty Line," which provides a standardized measure of national poverty in each country. *

- Click to continue

(untitled)

48. You are about to be asked a series of four related questions, and you need to really think about your choices. *

- Click to continue

---

49. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='146'] years, but whose cost implies you will have to **live below the poverty line** for the rest of your life? *

- Not interested at all
- Potentially interested
- Definitely interested

---

50. How interested are you in taking this medicine that would allow you to live for beyond [question('value'), id='199'] years, but whose cost implies you will have to **live below the poverty line** for the rest of your life? *

- Not interested at all
- Potentially interested
- Definitely interested

---

51. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your **current income** or to take the medicine and live until the age of [question('value'), id='150'] years in **poverty**? *

- Live until age of [question('value'), id='150'] years in**poverty**
- Live until age of [question('value'), id='146'] years on your**current income**

---

52. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='375'] years in **poverty**? *

- Live until age of [question('value'), id='375'] years in**poverty**
- Live until age of [question("value"), id="146"] years on your current income

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53. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='378'] years in **poverty**? *

- Live until age of [question("value"), id="146"] years on your current income
- Live until age of [question('value'), id='378'] years in **poverty**

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54. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='491'] years in **poverty**? *

- Live until age of [question('value'), id='491'] years in **poverty**
- Live until age of [question("value"), id="146"] years on your current income

---

55. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your **current income** or to take the medicine and live until the age of [question('value'), id='205'] years in **poverty**? *

- Live until age of [question('value'), id='205'] years in**poverty**
- Live until age of [question('value'), id='199'] years on your**current income**

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56. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='381'] years in **poverty**? *

- Live until age of [question("value"), id="199"] years on your current income
- Live until age of [question('value'), id='381'] years in **poverty**

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57. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='384'] years in **poverty**? *

- Live until age of [question('value'), id='384'] years in **poverty**
- Live until age of [question("value"), id="199"] years on your current income

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58. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='494'] years in **poverty**? *

- Live until age of [question('value'), id='494'] years in **poverty**
- Live until age of [question("value"), id="199"] years on your current income

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59. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your **current income** or to take the medicine and live until the age of [question('value'), id='202'] years in **poverty**? *

- Live until age of [question('value'), id='146'] years on your**current income**
- Live until age of [question('value'), id='202'] years in**poverty**

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60. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='150'] years in **poverty**? *

- Live until age of [question('value'), id='150'] years in **poverty**
- Live until age of [question("value"), id="146"] years on your current income

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61. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='150'] years in **poverty**? *

- Live until age of [question("value"), id="146"] years on your current income
- Live until age of [question('value'), id='150'] years in **poverty**

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62. Would you prefer to live untreated until the age of [question('value'), id='146'] years on your current income or to take the medicine and live until the age of [question('value'), id='202'] years in **poverty**? *

- Live until age of [question("value"), id="146"] years on your current income
- Live until age of [question('value'), id='202'] years in **poverty**

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63. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your **current income** or to take the medicine and live until the age of [question('value'), id='494'] years in **poverty**? *

- Live until age of [question('value'), id='494'] years in**poverty**
- Live until age of [question('value'), id='199'] years on your**current income**

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64. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='208'] years in **poverty**? *

- Live until age of [question("value"), id="199"] years on your current income
- Live until age of [question('value'), id='208'] years in **poverty**

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65. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your current income or to take the medicine and live until the age of [question('value'), id='208'] years in **poverty**? *

- Live until age of [question('value'), id='208'] years in **poverty**
- Live until age of [question("value"), id="199"] years on your current income

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66. Would you prefer to live untreated until the age of [question('value'), id='199'] years on your **current income** or to take the medicine and live until the age of [question('value'), id='494'] years in **poverty**? *

- Live until age of [question('value'), id='199'] years on your**current income**
- Live until age of [question('value'), id='494'] years in**poverty**

(untitled)

67. What was the main motive guiding your answers when asked whether you would take a medicine that increases your lifespan but at the cost of living in poverty?

- Life is not worth living in poverty
- Taking such costly medicine is only worth it if your lifespan is sufficiently increased
- Other

(untitled)

68. We are interested in understanding whether you think you are poor, close to being poor or far from being poor. Approximately, by how much should your household income be divided in the future for you to become poor?

- I am already poor or almost poor
- To become poor, my income would need to be divided by two
- To become poor, my income would need to be divided by four
- To become poor, my income would need to be divided by eight or more

(untitled)

69. Think of another person whose life is similar to yours. This person has the same age, lives in a similar family and has the same income as you. Assume this person contracts a painless disease that, if untreated, would kill this person in 10 years. Assume the person could buy a medicine that would delay her death by 5 years, but this medicine is so expensive that the person would spend the rest of her life in poverty. What do you think that person would choose?

- I think this person would prefer to live untreated for 10 years under this person's current income
- I think this person would buy the medicine to live for 15 years in poverty

(untitled)

70. If they had a choice, which of the following two lives do you think that people in your country would choose for themselves?

- Living their whole life in poverty and dying at 75 years old
- Living their whole life free from poverty and dying at 50 years old

71. Do you feel that this survey was biased? (Optional)

- Yes
- No
- Unsure

(untitled)

72. Please feel free to give us any feedback, comments or thoughts you have regarding this survey in the field below. (Optional)