



Original article

Well-Being Inequality Among Adolescents and Young Adults

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A B S T R A C T

Purpose: This study aimed to examine patterns of well-being across developmental stages and patterns of inequality in well-being among young adults and adolescents. Well-being exists when adolescents and young adults thrive and can achieve their full potential.

Methods: We used individual-level survey data from the Gallup World Poll from 164 countries between 2009 and 2017 (N = 446,934). Regression analyses were used to determine associations.

Results: We documented substantial inequality in well-being across three developmental stages (adolescence, early adulthood, young adulthood). Health, education, income, and social relations are strongly associated with mean well-being and well-being inequality. We showed, for mean well-being, the relative importance of these factors varies over life-cycle stages. For inequality, most factors were consistent across developmental groups; however, we identified certain characteristics that were only relevant at certain developmental stages.

Discussion: Given the policy importance of well-being at all stages of life and the significance of adolescence and early adulthood in developing positive health-related behaviors, policies and programs targeting the highlighted characteristics are likely to be effective but require a multi-sectoral approach.

IMPLICATIONS AND
CONTRIBUTION

The well-being of individuals of all ages is a key global policy objective and is crucial to later-life outcomes. Well-being inequality provides important policy-relevant insights not otherwise conveyed by its level. This study presents evidence on the factors associated with inequality in well-being across three stages of development.

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Well-being for people of all ages is a key global policy goal, enshrined in UN Sustainable Development Goal 3, and has become an often-used measure of social progress [1,2]. Well-being has been shown to be a predictor of physical and mental health, later-life mortality and morbidity, and later-life outcomes such as income, job performance, and social relationships [3–7]. Adolescent well-being is defined as existing when “*adolescents have the support, confidence, and resources to thrive in contexts of secure and healthy relationships, realizing their full potential and rights*” [8].

In most policy or scholarly applications, well-being is defined by using the concept of subjective well-being (SWB) [1,9–11]. SWB includes both hedonic well-being and life satisfaction and is represented by a single indicator [9–11]. It measures a person’s overall objective satisfaction with life and their mental comparisons with their ideals and goals [10,11].

Early developmental stages of life are critical for the acquisition and consolidation of elements that contribute to subsequent health and well-being [8,12]. If well-being is a primary policy objective and a key determinant of future well-being, then its full distribution among a population provides key insights into a variety of aspects of life, including trust, health, and social interactions [13]. In the words of Amartya Sen, inequality reflects the “*ethics of social arrangements*” [13]. Therefore, measuring inequality in well-being enables researchers and policymakers to better understand differences in resiliency, risk, and

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opportunities faced by all individuals, which would be obscured if we only studied mean well-being [2,14].

Existing research on the inequality in well-being does not address younger adults [15,16]. We therefore aim to fill this gap in the literature by examining the factors associated with well-being and well-being inequality in a global sample across three developmental life stages (adolescence (15–17y), early adulthood (18–25y), and young adulthood (26–35y); according to the definition by [17]). A key advantage of our study is that we use a large (>440,000), nationally representative data set which allows us to establish statistically robust relationships between a wide range of factors associated with well-being. We also examined these relationships across gender and levels of economic development. The well-being of people of all ages is a global policy priority, and it is crucial to the quality of life in later life stages. Inequality in well-being offers policy-relevant insights that its level alone cannot convey [13,16].

Methods

Study population

We used individual-level survey data from young adults in 164 countries between 2009 and 2017 ($N = 446,934$). Data were taken from the Gallup World Poll [18], which uses nationally representative and randomly selected samples representative of ~99% of the world's population. For most countries, 1,000 adults (aged at least 15 years) were interviewed (GWP increases the sample size for some of the world's largest countries. In 2014, for instance, 3,000 and 5,000 people were interviewed in India and China, respectively). Interviews were conducted via telephone, if a country has at least an 80% phone coverage and face-to-face otherwise. Gallup randomly selected households relying on the Kish grid method and maintains minimal error margins, thereby

eliminating most measuring inaccuracies caused by translation or framing issues.

Conceptual framework

We aimed to provide evidence of global inequality in well-being among young adults and adolescents. The conceptual framework developed by [8,12,19,20] serves as the foundation for our modeling approach. Figure 1 illustrates the conceptual framework, which is composed of sociodemographic characteristics, living conditions, physical health, social support, and SWB. Individuals' living conditions can be determined by their household income, housing conditions, and employment status. Unfavorable living conditions, such as low income, difficulty finding housing or shelter, or difficulty obtaining employment, can negatively affect a person's physical health and, consequently, their SWB. Even though living conditions have a direct impact on SWB, this relationship can also involve physical health [5,20]. Moreover, social support may offset or moderate the association between living conditions and SWB [20,21]. Lastly, we hypothesize that the factors that influence SWB should also affect SWB inequality [14,16]. We selected factors potentially associated with well-being according to [8,12,19,20], the related empirical literature [1,14–16], and available data from the GWP.

Variables

Our outcome variable was self-reported SWB, a broad measure of life satisfaction that combines hedonic well-being and life satisfaction components [9–11]. GWP follows Organisation for Economic Co-operation and Development guidelines on measuring well-being using the question: "Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and

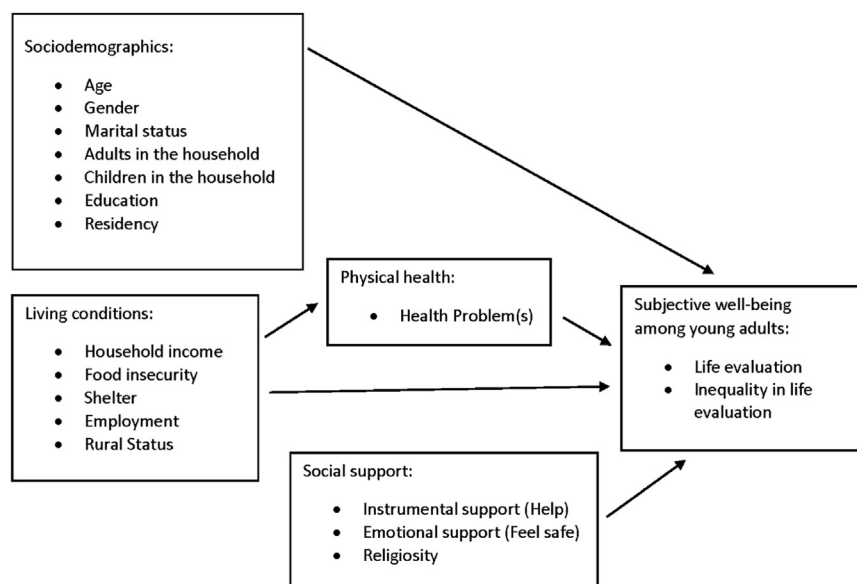


Figure 1. A conceptual framework of sociodemographic characteristics, living conditions, physical health, social support, and subjective well-being among young adults (adapted from [8,12,19,20]).

Table 1

Descriptive statistics from 164 countries 2009–2017 (N = 446,934)

	Adolescent		Early adulthood		Young adults		Wald χ^2 test
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	
Subjective well-being	5.666	2.410	5.394	2.331	5.273	2.298	$p < .001$
Age	16.035	0.807	21.431	2.363	30.425	2.865	
Number of adults in the household	4.225	1.822	4.021	2.053	3.317	2.000	$p < .001$
Children present in the household	0.660	0.474	0.583	0.493	0.714	0.452	$p < .001$
Female	0.480	0.500	0.502	0.500	0.521	0.500	$p < .001$
Marital status							$p < .001$
Single	0.953		0.701		0.284		
Married/Partner	0.043		0.281		0.663		
Separated, widowed, divorced	0.004		0.019		0.053		
Education							$p < .001$
Elementary	0.534		0.321		0.372		
Secondary	0.464		0.596		0.469		
Postsecondary	0.002		0.084		0.160		
Log annual household income	8.634	1.999	8.692	1.868	5.273	2.298	$p < .001$
Health problems	0.133	0.339	0.146	0.353	0.170	0.375	$p < .001$
Native-born	0.977	0.151	0.972	0.166	0.961	0.195	$p < .001$
Living in rural area	0.651	0.477	0.624	0.484	0.616	0.486	$p < .001$
Religiosity	0.757	0.429	0.751	0.433	0.735	0.441	$p < .001$
Confidence in friends and family	0.859	0.348	0.832	0.374	0.800	0.400	$p < .001$
Feeling safe	0.579	0.494	0.586	0.493	0.611	0.487	$p < .001$
Employed	0.238	0.426	0.511	0.500	0.661	0.473	$p < .001$
Observations	54,386		177,761		214,787		

Survey weights applied. Table also presents the results from a Wald χ^2 test on equality of means across groups (p values shown). Test assumes heterogeneous variances within the three age groups and uses survey weights. Development classifications follow [17].

the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?”. Responses were recorded on an 11-step Cantril ladder [22]. This approach to measuring well-being

has been shown to be comparable to other measures of SWB [23].

In selecting the covariates which could affect adolescent well-being, we adhered to the conceptual framework proposed by the

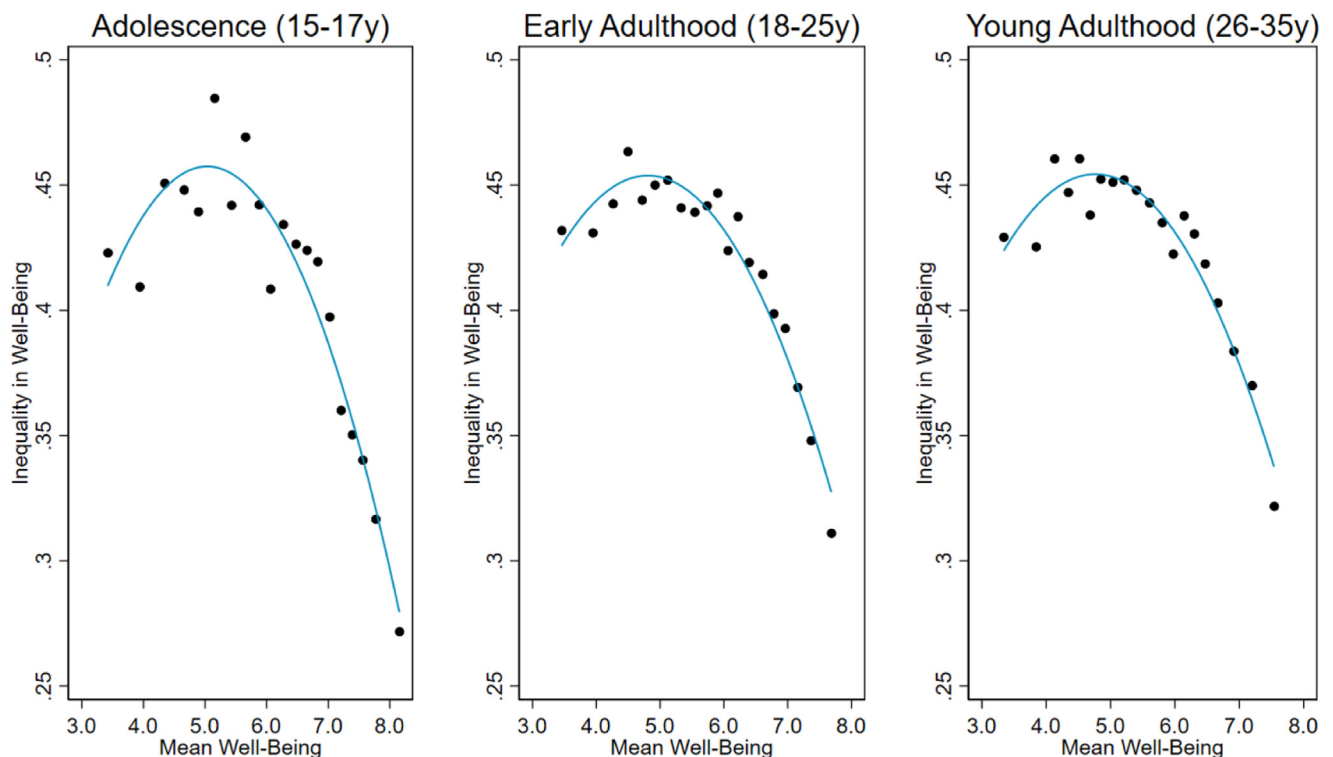


Figure 2. Mean well-being versus inequality of well-being of 164 countries 2009–2017 (N = 446,935) by developmental life stage. Notes: Binned scatter plot of country-year level mean well-being (horizontal axis) and inequality in well-being (vertical axis) for adolescence (left panel), early adulthood (middle panel), and young adulthood (right panel). Quadratic regression lines shown for each development stage. Development classifications follow [17].

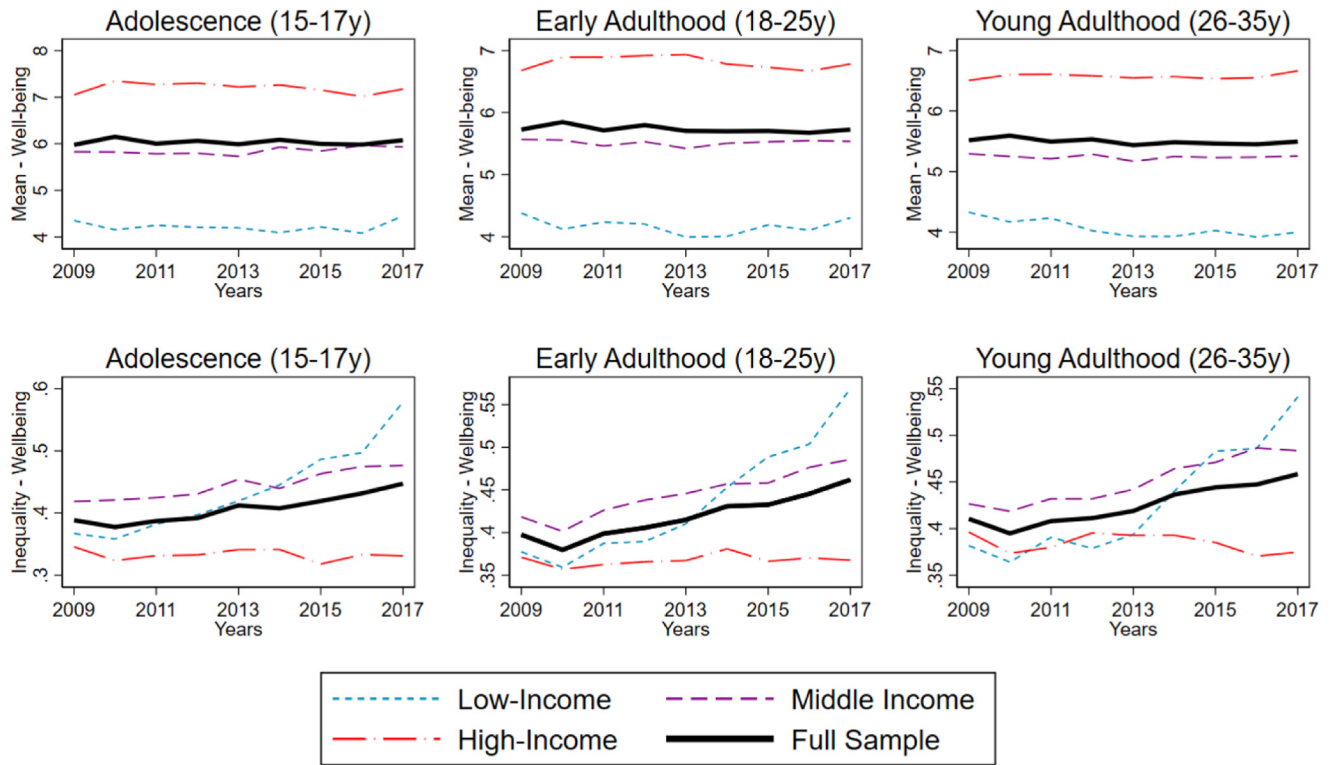


Figure 3. Time trends in mean well-being and inequality of well-being of 164 countries 2009–2017 (N = 446,934) by developmental life stage. Notes: Time series plots of country-level mean (top row) and within-country inequality (bottom row) of well-being by economic development status (line colors and styles) and developmental life stage (columns). Line colors and styles represent World Bank economic development rankings: low-income ($\leq \$995$) in blue, short-dashed line, middle-income ($> \$996$ and $\leq \$12,055$) in purple long-dashed line, and high-income ($> \$12,056$) in red dash-dotted line. Developmental life stage classification follows [17].

World Health Organization discussed earlier [8,12]. Standard demographics were included such as age, immigration status, sex assigned at birth (via a male-female dummy). Education was controlled for featuring three levels: elementary, secondary, and postsecondary education. Marital status was controlled for using the following categories: single, married or partner, separated, widowed, or divorced. Children were captured as a dummy variable for any children present in the household. Health status was measured by the response to a question about health problems: “Do you have any health problems that prevent you from doing any of the things people your age normally can do?”. Feeling safe is a potential factor of well-being and we used the response to the question: “Do you feel safe walking alone at night in the city or area where you live?”. As social relations are an important factor of well-being, we controlled for it via the response to the question: “If you were in trouble, do you have relatives or friends you can count on to help you whenever you need them, or not?”. Religiosity was measured by the response to the question “Is religion an important part of your daily life?”. The location the respondent lives in was measured by a “rural” variable, which is one if the respondent lives (i) rural or farm or (ii) small town, and zero if the respondent lives in (iii) large city or (iv) suburbs.

Income is the logarithm of annual household income per capita in international dollars. Income was initially reported in respondents’ local currency and then converted into international dollars using the World Bank’s purchasing power parity private consumption conversion factor. Multiple imputations were used to replace missing values and respondents who find it

difficult to answer the income question were presented with a set of income brackets [18]. Finally, employment status was a dummy variable which is one if the respondent is employed or self-employed and zero if the respondent is unemployed or out-of-the-workforce. We grouped countries into three groups according to 2019 World Bank annual gross national income per capita thresholds: low-income ($\leq \$995$), middle-income ($> \996 and $\leq \$12,055$), and high-income ($> \$12,056$).

Statistical analysis

Descriptive and regression analyses were employed to examine the relationships between the framework-identified factors and well-being and well-being inequality, respectively [14,16,22]. Precisely, we estimated the conditional mean and variance of individual-level well-being for each of the three development stages separately [24]. Our measure of inequality is therefore the interpersonal dispersion of well-being conditional on individual factors. We performed the following two-step procedure:

$$\text{Step 1: } \text{WellBeing}_{i,j,t} = \alpha + \sum_{n=1}^N \beta_n X_{i,j,t}^n + \theta_j + \theta_t + \varepsilon_{i,j,t}, \quad (1)$$

$$\text{Step 2: } \varepsilon_{i,j,t}^2 = \varphi + \sum_{n=1}^N \omega_n X_{i,j,t}^n + \theta_j + \theta_t + \varepsilon_{i,j,t}. \quad (2)$$

Table 2

Linear regression results of self-reported well-being from 164 countries 2009–2017 (N = 446,934)

	Adolescence (15–17y)		Early adulthood (18–25y)		Young adulthood (26–35y)	
	(1) Conditional mean	(2) Conditional variance	(3) Conditional mean	(4) Conditional variance	(5) Conditional mean	(6) Conditional variance
Age	−0.087*** (0.012)	−0.092* (0.037)	−0.033*** (0.002)	−0.025** (0.007)	−0.010*** (0.002)	−0.005 (0.005)
Number of adults in the household	−0.156* (0.006)	0.009 (0.020)	−0.010** (0.004)	0.006 (0.011)	−0.021*** (0.004)	0.034** (0.011)
Children present in the household	−0.055* (0.022)	0.073 (0.064)	−0.112*** (0.013)	0.136*** (0.039)	−0.106*** (0.014)	0.072 (0.039)
Female	0.087*** (0.019)	0.168** (0.061)	0.160*** (0.012)	−0.081* (0.034)	0.172*** (0.012)	−0.121*** (0.033)
Marital status						
Single	0.147 (0.147)	−0.873 (0.541)	0.281*** (0.037)	−0.372** (0.133)	0.157*** (0.022)	−0.023 (0.072)
Married/Partner	0.073 (0.152)	−0.507 (0.548)	0.283*** (0.037)	−0.202 (0.131)	0.230*** (0.021)	−0.204** (0.063)
Education						
Secondary education	0.238*** (0.025)	−0.559*** (0.080)	0.348*** (0.017)	−0.690*** (0.064)	0.350*** (0.017)	−0.641*** (0.059)
Postsecondary education	0.234 (0.123)	−1.313** (0.466)	0.573*** (0.024)	−1.007*** (0.090)	0.636*** (0.022)	−1.014*** (0.072)
Log annual household income	−0.204*** (0.021)	0.096 (0.064)	−0.226*** (0.016)	0.009 (0.047)	−0.294*** (0.015)	−0.013 (0.042)
Log annual household income ²	0.029*** (0.002)	−0.023*** (0.005)	0.032*** (0.001)	−0.017*** (0.004)	0.041*** (0.001)	−0.018*** (0.003)
Health problems	−0.192*** (0.033)	0.630*** (0.100)	−0.191*** (0.020)	0.634*** (0.058)	−0.273*** (0.018)	0.536*** (0.048)
Native-born	−0.044 (0.061)	−0.235 (0.175)	0.054 (0.033)	−0.359*** (0.094)	0.058* (0.027)	−0.395*** (0.077)
Living in rural area	−0.221*** (0.025)	−0.015 (0.069)	−0.162*** (0.016)	−0.044 (0.045)	−0.101*** (0.016)	−0.092* (0.043)
Religiosity	0.037 (0.030)	0.140 (0.080)	0.073*** (0.017)	0.113* (0.046)	0.076*** (0.015)	0.119*** (0.040)
Confidence in friends and family	0.640*** (0.031)	−0.275** (0.098)	0.608*** (0.021)	−0.458*** (0.061)	0.588*** (0.018)	−0.470*** (0.048)
Feeling safe	0.146*** (0.022)	−0.196** (0.065)	0.167*** (0.014)	−0.061 (0.039)	0.213*** (0.013)	−0.066 (0.035)
Employed	−0.094*** (0.025)	0.367*** (0.074)	−0.093*** (0.012)	0.001 (0.033)	−0.021 (0.012)	−0.221*** (0.035)
Observations	54,386	54,386	177,761	177,761	214,787	214,787
Adjusted R ²	0.29	0.07	0.26	0.06	0.27	0.06

Development classifications follow [18]. All regressions (ordinary least squares) include country- and year-fixed effects. Omitted category for marital status is separated, widowed, or divorced and for education is elementary education. Clustered standard errors at the country-year level in parenthesis. Significance levels: *: $p < .05$, **: $p < .01$, ***: $p < .001$.

Table 3

Descriptive statistics from 164 countries 2009–2017 (N = 446,934) by economic development group and developmental life stage

	Adolescence	Early adulthood	Young adulthood	Obs.	Wald χ^2 test
Low-income	4.188 (2.196)	4.101 (2.158)	3.997 (2.094)	102,314	$p < .001$
Middle-income	5.776 (2.327)	5.430 (2.58)	5.192 (2.247)	264,717	$p < .001$
High-income	7.221 (1.725)	6.874 (1.788)	6.596 (1.869)	79,903	$p < .001$
Obs.	54,386	177,761	214,787	446,934	
Wald χ^2 test	$p < .001$	$p < .001$	$p < .001$		

Table presents mean and standard deviation (in parenthesis) of well-being. Survey weights applied. Table also presents the results from a Wald χ^2 test on equality of means across groups. Test assumes heterogeneous variances within the groups and uses survey weights. World Bank economic development rankings: low-income ($\leq \$995$), middle-income ($> \996 and $\leq \$12,055$), and high-income ($> \$12,056$).

Step 1. involved estimating the conditional mean of well-being of individual i in country j in year t . Step 2 used the residuals from the first step as the dependent variable. This follows from the fact that the conditional expectation is equivalent to the conditional variance (our measure of inequality), given the mean-zero property of the residuals. Both steps controlled for various factors potentially associated with well-being in $X_{i,j,t}$ as well as country and year fixed effects θ_j, θ_t . These fixed effects capture time invariant differences across countries (e.g., cultural and policy differences), as well as the potential impact of economic cycles and survey context effects. We estimated both steps using a linear probability model, as the literature has shown that the obtained coefficients are similar to those obtained from an ordered categorical model [25]. Finally, we used cluster-robust standard errors at the country-year level [14,16].

Results

Descriptive statistics

We found that well-being significantly declines with developmental stage ($p < .001$), with adolescents having the greatest mean well-being (5.67 ± 2.41), followed by early adulthood (5.39 ± 2.33) and young adulthood (5.27 ± 2.30) (see Table 1).

Figure S1 in the Supplementary Material presents the distribution of well-being across developmental life stages.

Figure 2 reveals an inverted U shape relationship between mean and inequality in well-being at the country-year level. Across stages of development, the distribution of well-being is not equally distributed and is most unequal in countries with a mean level of well-being near the 0–10 scale's median. Young adults in countries above or below the median have a more equal distribution of well-being.

Figure 3 presents the time trends in mean and inequality in well-being by developmental life stage and economic development status. The top row shows that the mean in well-being shows almost no time trend and remains stable over our sample period. For each developmental life stage, we found that well-being increases in economic development. Results are different for the inequality in well-being (bottom row). The inequality in well-being is increasing over time in low- and middle-income countries but is stable in high-income countries. Again, this result holds for each developmental life stage, with the largest increases found in the adolescence group.

Mean well-being

Table 2 presents our results for the three developmental stages. We found that women have higher well-being than men

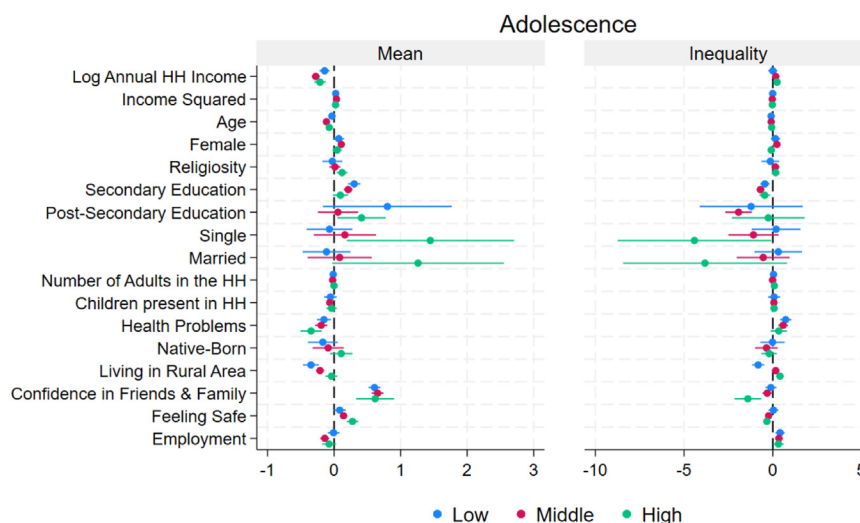


Figure 4. Linear regression results of self-reported well-being for adolescence by World Bank economic development group. Solid point shows mean estimate and lines represent 95 percent confidence bands.

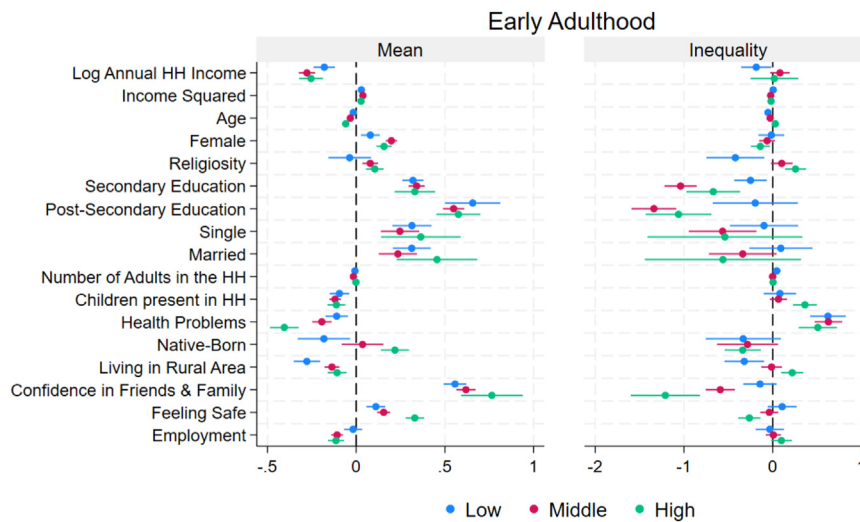


Figure 5. Linear regression results of self-reported well-being for early adulthood by World Bank economic development group. Solid point shows mean estimate and lines represent 95 percent confidence bands.

($\beta = 0.018, p < .001$), and that higher education ($\beta = 0.01$ and $\beta = 0.05$), being religious ($\beta = 0.01$), having confidence in friends and family ($\beta = 0.095$), and feeling safe ($\beta = 0.03$) were all positively associated with well-being (all $p < .001$). Age ($\beta = -0.029$), more adults in the households ($\beta = -0.012$), the presence of children in the household ($\beta = -0.011$), health problems ($\beta = -0.027$), living in a rural area ($\beta = -0.044$), and being employed ($\beta = -0.017$) were negatively associated with well-being (all $p < .001$). Income had a U-shaped relationship with well-being ($\beta = 0.316, p < .001$). Interestingly, the importance of these factors varied over life-cycle stage. The magnitude of association for education, income, having confidence in friends and family, feeling safe, and having children increased with development stage. However, the role of age, the number of adults in a household, marital status, living in a rural area, and employment decreased with age. As

respondents aged, the effect of age on their level of well-being diminished.

Inequality in well-being

Fewer variables were found to be correlated to well-being inequality. Inequality was higher among individuals with health problems ($\beta = 0.033, p < .001$) and who were religious ($\beta = 0.009, p < .001$). Inequality was lower among those with a higher level of education ($\beta = -0.012$ and $\beta = -0.043, p < .001$), who were native-born ($\beta = -0.005, p < .001$), and who trusted their friends and family ($\beta = -0.015, p < .001$). The association between income and inequality had an inverted U shape ($\beta = -0.094, p < .001$), with inequality being greatest among low- and high-income households. Several intriguing results

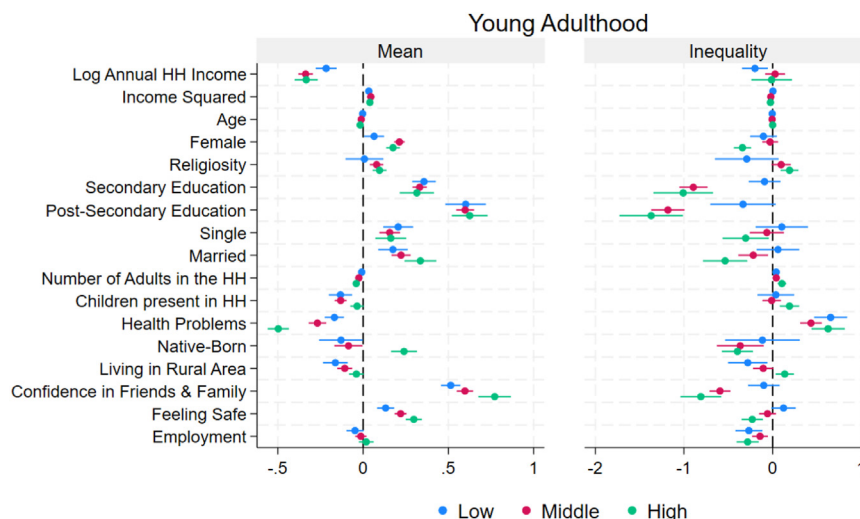


Figure 6. Linear regression results of self-reported well-being for young adulthood by World Bank economic development group. Solid point shows mean estimate and lines represent 95 percent confidence bands.

Table 4

Descriptive statistics from 164 countries 2009–2017 (N = 446,934) by gender and developmental life stage

	Adolescence	Early adulthood	Young adulthood	Obs.	Wald χ^2 test
Female	5,649 (2.432)	5,402 (2.345)	5,303 (2.308)	239,666	$p < .001$
Male	5,682 (2.389)	5,386 (2.316)	5,241 (2.286)	207,268	$p < .001$
Obs.	54,386	177,761	214,787	446,934	
t-test	$p < .01$	$p < .001$	$p < .001$		

Table presents mean and standard deviation (in parenthesis) of well-being. Survey weights applied. Table also presents the results from a Wald χ^2 test on equality of means across developmental life groups. Test assumes heterogeneous variances within the groups and uses survey weights. For gender differences, we use a t-test allowing for unequal variances within groups.

were discovered for additional factors. Inequality was larger among adolescent females but lower among early and young adult women ($\beta = 0.013$, $p < .001$). Only among young adults was rural living associated with lower inequality ($\beta = -0.001$, $p < .001$). Employment increased inequality among adolescents but reduced inequality among young adults ($\beta = 0.024$, $p < .001$).

Heterogeneity by economic development group

One might naturally wonder whether these findings vary by economic development. Table 3 presents well-being by World Bank economic development group and developmental life stage. We found that well-being increased in economic development ($p < .001$). Furthermore, declines occurred over the course of life in all three economic development categories ($p < .001$), and the declines were more pronounced as economic development increased.

Figure 4 presents the estimated coefficients for mean (left panel) and inequality (right panel) in well-being for the adolescence group by World Bank economic development group (colors). Figures 5 and 6 present the same for early adulthood and young adulthood, respectively. Several results stand out. Rurality had a negative association with mean well-being in low- and middle-income countries but no association in high-income countries for the group of adolescents. For inequality in well-being, we found that confidence in friends and family had no

association in low- and middle-income countries but a negative association in high-income countries.

For early adulthood, we found that females had a higher mean well-being in middle- and high-income countries compared to low-income countries. Health had a more negative association with well-being in high-income countries compared to the other countries. Being native had a negative association in low-income countries, did not matter in middle-income countries, and had a positive association in high-income countries. Living in a rural area had a more negative association in low-income countries compared to middle- and high-income countries. Feeling safe had a stronger association with well-being in high-income countries compared to the other countries and employment had a negative association in well-being in middle- and high-income countries. For the inequality in well-being, religiosity was negatively associated with well-being inequality in low-income countries but had a positive association in middle- and high-income countries. Education reduced inequality with the strongest association in middle- and in high-income countries. Living in a rural area was associated with lower inequality in low-income countries, no association in middle-income countries, and higher inequality in high-income countries. Confidence in family and friends had the strongest negative association in high-income countries. Finally, in young adulthood, we found that mean well-being was more strongly negatively associated with health problems in high-income countries. Being native-born only had a positive association in high-income countries and

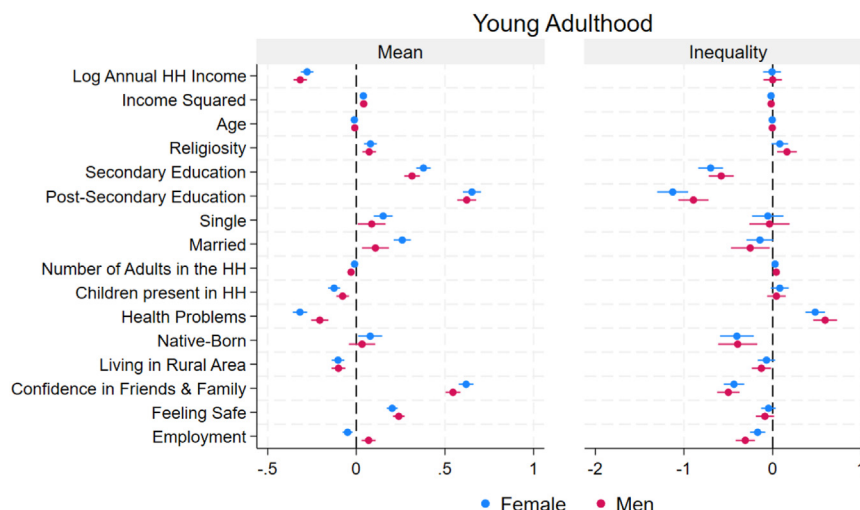


Figure 7. Linear regression results of self-reported well-being for young adulthood by gender. Solid point shows mean estimate and lines represent 95 percent confidence bands.

showed no association in the other countries. Feeling safe and having confidence in friends and family both revealed a stronger association as economic development increases. Inequality in well-being in this developmental life stage was smaller among more educated individuals especially in middle- and high-income countries, whereas there was no association in low-income countries. Inequality was lower among individuals living in a rural area in low-income countries, with no association in middle-income countries, and a positive association in high-income countries. We found lower inequality among individuals with high confidence in family and friends in middle- and high-income countries but not in low-income countries.

Heterogeneity by gender

This subsection considers potential differences by developmental life stage by gender (sex assigned at birth). Table 4 presents well-being disaggregated by gender for each of the three developmental life stages studied in this paper. We found that males had higher well-being during adolescence ($p < .01$) but females had higher well-being during early ($p < .001$) and young ($p < .001$) adulthood. As for the full sample, we found that well-being decreased over life stages for males and females ($p < .001$). The decrease was larger in males than in females.

We did not find any significant differences in the factors associated with mean or inequality in well-being for adolescence (Figure S2 in the Supplementary Material), or early adulthood (Figure S3 in the Supplementary Material). Figure 7 shows the estimated coefficients for young adulthood by gender. Here, we found that health problems had a stronger negative association with mean well-being for females compared to males. Furthermore, employment had a negative association with mean well-being in females and a positive association for males.

Discussion

This article studied the correlates of well-being across three developmental life stages [17] in a global sample of young adults. We provided novel evidence about the inequality in well-being and the factors associated with it across these life stages. We used a large ($>440,000$), nationally representative data set which allowed us to establish robust statistical relationships between a wide range of factors associated with well-being and its inequality.

We documented substantial well-being inequality across three crucial stages of development [17]. Our results for the factors associated with well-being were in line with the findings in the related literature [1,14–16], but we documented changes in relative importance over developmental life stages. Overall, the most significant characteristics are health, education, income, and social relations. We found, for the first time, correlations between inequality in well-being and health, education, income, and social relationships. In addition, we demonstrated that certain characteristics stay consistent throughout the developmental stages, while others were only relevant at particular life-cycle stages. For example, we found that age mattered during the first two stages but not during young adulthood. Education and social capital mattered more during young adulthood. Inequality was larger among females during adolescence but lower among the later two stages. Children, in contrast, only mattered during early adulthood. Immigration status mattered during the later two stages while

the feeling of safety only mattered during adolescence. We then documented that the factors associated with mean and inequality in well-being vary by economic development. Finally, differences in the factors associated with mean and inequality in well-being between men and women are found to be small.

Limitations

Certain limitations must be highlighted. Because we lack robust exogenous instruments and longitudinal data, our findings must first be interpreted as correlations. Additionally, intrahousehold data would be required to understand the relationships between young adults and their parents, as well as how these relationships may affect well-being and its inequality [26].

Policy implications

To achieve the Sustainable Development Goals for all people, it is crucial to gain a deeper understanding of inequality during early development. Consideration of the full distribution of well-being, as opposed to its mean, is likely to increase the efficacy of public policy. Only when policies can increase mean well-being and reduce the inequality in well-being will the benefits of higher well-being be experienced by all. Our results imply policies should target, for example, children living in rural areas during adolescence; and for young adults, targeting health is critical. In general, our findings help to inform targets for policies over the developmental process. Given the importance of well-being at all stages of life and the significance of adolescence and early adulthood in developing positive health-related behaviors, policies and programs are likely to require a multi-sectoral approach (e.g., health, education, social development) and involve various stakeholders (e.g., government, non-governmental organizations). This multisectoral approach is needed as the factors associated with well-being are correlated with each other. For example, higher educated individuals are also known to be healthier [27]. Furthermore, our results also imply that policy decisions should not only consider implications for mean well-being but consider the full distributional implications.

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Supplementary Data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.jadohealth.2023.10.015>.

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