

The decline in reading for pleasure in the US: analyses of 20 years of the American Time Use Survey

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Abstract

Reading for pleasure has a wide range of benefits for literacy, employment, health, and wellbeing as well as promoting cultural understanding. However, previous monitoring of reading in the United States (US) has been inconsistent, with some studies demonstrating large declines over time, and others suggesting engagement has not changed. We provide the first comprehensive exploration of reading between 2003 and 2023 in the US, using a nationally representative sample from the American Time Use Survey (n=236,270). We found marked declines in daily reading over the last 20 years in the US, with a relative decrease of 2% per year in the proportion of individuals reading for pleasure (prevalence ratio=0.98, 95% CI=0.98, 0.98, p<0.001). There were disparities in reading across population groups, with widening gaps for those of Black race, those with lower education levels, less annual income, living in non-metropolitan areas, and with a disability. Our findings thus demonstrate the urgent need for more targeted strategies to increase opportunities for reading. Monitoring daily reading, and the individual characteristics influencing reading, will be vital to understand the impacts of future policies.

Introduction

Reading for pleasure, also referred to as leisure reading, comprises any kind of reading done for purposes other than work or school, including fiction, non-fiction, magazines, newspapers, listening to audiobooks, using e-readers, and reading to or with children. Extensive research has explored the benefits of reading for pleasure (hereafter referred to as “reading”), from direct gains in comprehension skills,^{1,2} vocabulary, logical reasoning, imagination, emotional intelligence, and empathy,³ to links with academic achievement, financially rewarding employment, career growth, and involvement in civic life.⁴ Reading may also promote health, reducing stress, anxiety, and depressive symptoms,^{5,6} supporting better sleep,⁷ and slowing cognitive decline in older adults,⁸ as well as increasing longevity.⁹ Impacts of reading can also extend beyond the individual level, with shared experiences in reading being important for bridging cultural gaps, increasing understanding, and building a sense of belonging and identity.³

Given the cultural value ascribed to reading, there is a long history of studying its prevalence in the United States (US). Concerns that fewer people may be reading have arisen following declines in reading ability across the population.^{10,11} Yet, evidence is mixed on whether fewer people are now reading in the US. This has been the subject of several National Endowment for the Arts (NEA) reports, with messages ranging from “reading at risk” (2004)¹² to “reading on the rise” (2009).¹³ These NEA reports have used data from the nationally representative Survey of Public Participation in the Arts (SPPA), repeated at five-year intervals. Looking across these reports, there appear to have been declines in book reading; in 1992, 61% of adults reported reading a book for pleasure over the last 12 months, but this dropped to 49% by 2022.^{12,14} Greater declines have been observed among young adults aged 17-18 in the nationally representative Monitoring the Future survey, with the proportion who read a book or magazine every day decreasing from 60% in the late 1970s to 16% by 2016.¹⁵ Yet, in a set of telephone surveys conducted by Pew Research Centre, with a national sample weighted to be representative of US adults (but not randomly recruited), 75% of adults reported reading a book in any format in the last 12 months, and this figure remained similar from 2011 to 2021.¹⁶

Inconsistent findings are likely due to the limitations of existing data. Research from outside the US is relatively uninformative to understanding US patterns, as there are large cross-country differences in reading, even between high-income Western countries.¹⁷ Yet, within the US, research has most frequently studied early adolescents, with relatively few studies on adults.¹⁸ In adult surveys, measures of reading are likely subject to social desirability bias, as many people believe that they should read.² Furthermore, most previous research has asked people about reading habits retrospectively over a one-year period, which is subject to substantial recall biases. Apparent fluctuations in rates of reading may also be a result of combining findings from multiple short-term studies with inconsistent methods.⁴ Additionally, there is a lack of evidence considering the long-term impacts of the COVID-19 pandemic, which may have influenced reading behaviours, as indicated by a dramatic increase in print book sales during and following the pandemic.¹⁹

Previous research has also identified a steep social gradient in reading in the US, with those who identify as women, White, and as having the highest levels of education and income most likely to read.^{3,4,12,13,16,17,20} But it is less clear whether and how these disparities have changed over time. Some evidence is promising in showing a greater increase in reading in adults with lower income over recent

years, resulting in a narrowing gap;¹⁶ whereas other studies have reported relatively uniform time trends in reading across gender, racial, and socioeconomic groups, with disparities remaining stable over time.^{12,13,15} Identifying groups that are least likely to read is vital for informing targeted programmes to increase access to and engagement with reading. Monitoring these disparities over time will not only facilitate evaluation of current policies and interventions,²¹ but also support future policy initiatives.

In this study, we used time use survey data, which identifies, quantifies, and classifies people's behaviours within a specific 24-hour window, providing more detail than previous studies, substantially reducing recall bias, and enabling analysis of patterns in behaviours over multiple years. Specifically, we analysed data from the American Time Use Survey (ATUS), which includes over 10,000 individuals each year from 2003 to 2023, providing nationally representative estimates for an average day over a 20-year period in the US.²² We aimed to fully phenotype reading for pleasure as a behaviour amongst adults in the US. Our objectives were to: 1) estimate rates of reading on an average day; 2) determine how long people spent reading, both overall and for different types of reading; 3) explore whom reading was done with; 4) identify where reading was done; 5) examine potential disparities by exploring variation across different subgroups of the population; 6) describe current patterns using the latest available data, and 7) identify the national trends in these measures from 2003 to 2023.

Methods

Sample

The American Time Use Survey (ATUS) is a continuous cross-sectional survey, representing all residents of private households in the US aged 15 and over.²² Individuals are randomly selected from a subset of households that have completed their eighth month of interviews for the Current Population Survey (CPS). One individual per household is invited to ATUS two months after completing this CPS interview.

Data collection began in 2003, with data currently available to 2023. We excluded 2020 because of methodological issues due to the COVID-19 pandemic (data collection was paused for part of the year, so weights for 2020 cannot be combined with other years). Approximately 26,400 people were eligible per year, but response rates declined over time (57.8%-35.8%).²² Each participant was interviewed only once. ATUS excluded participants with incomplete responses. This left a total of 236,357 participants, who completed the ATUS once in 2003-2019 or 2021-2023 (Table S2). Following UCL Centre for Time Use Research's recommendations, we excluded participants who did not report the following during the diary day: spending time on sleep/rest/personal care/eating/drinking (n=15); at least one change in location (n=59); and at least one change in whether they spent time in the presence of others (n=13). This left a final analytical sample of 236,270 participants.

Ethical approval

Analysis of ATUS data reported in this paper has Institutional Review Board approval from the University of Florida (IRB201901792) and ethical approval from University College London Research Ethics Committee (project 18839/001). All participants in the study gave informed consent.

Measures

ATUS asked participants to recall their activities over 24 hours, beginning at 4am on the day prior to the interview and ending at 4am on the day of the interview. Participants were randomly assigned a day of the week on which to complete the survey, with 10% of the sample allocated to each weekday and 25% to each weekend day. Weights then account for this non-uniform distribution and differing response rates across days of the week, so that measures can be estimated for an average day. Information on secondary activities (activities that are done at the same time as the primary activity) was not collected, except for childcare. Participants reported every activity they took part in during the 24-hour period, including where they were and whom they were with. Activities were coded using a standard lexicon, verified by two coders, and classified within a three-tiered system, from broad to detailed categories including examples.

Reading

We focussed on daily reading for pleasure, classified by ATUS as reading for personal interest (e.g. reading a magazine/book/newspaper, listening to audiobooks, borrowing library books, reading on a Kindle or other e-reader) as well as reading with children (e.g. reading to or with household or non-household children, listening to child read, helping child read; Table S1). We measured whether participants engaged, and total time (minutes) spent, both overall and for each type of reading (reading for personal interest, reading with children; Figure 1). Engagement in each activity was indicated by spending ≥ 1 minute on it during the diary day.

We categorised whom reading was done with into six social contexts: alone, with partner or spouse, with child or grandchild, with other family member, with a friend/colleague/neighbour/acquaintance, and with multiple people. Finally, we categorised where reading was done into seven locations: own home, other's home, workplace, library, school, other community location (e.g. outdoors, place of worship, whilst travelling, other), or multiple locations.

Individual characteristics

Demographic, socioeconomic, and health-related information was collected either during the ATUS interview or from earlier CPS interviews. Measures were based on the data available, with categories determined by ATUS. We selected seven key individual characteristics that have previously been shown to influence reading.^{3,4,12,13,16,17,20} These were sex (male, female), age group (15-24 years, 25-65 years, 66 years and over), race (White, Black, Asian, Other [including American Indian, Alaskan Native, Hawaiian/Pacific Islander, mixed race]), education (high school or less, college, undergraduate, postgraduate), annual family income (quartiles: less than \$30,000, \$30,000 - \$59,999, \$60,000 - \$99,999, \$150,000 and over), metropolitan area (non-metropolitan area, metropolitan area), and disability status (no disability, disability that prevents work). Sex, age, metropolitan area, and disability status were measured in the ATUS interview. Race, education, and income were measured in the CPS interview, 2-5 months before the ATUS interview (mean=3.04, standard deviation [SD]=0.57). Further sociodemographic factors were included just in Table 1 to explore the sample characteristics.

Statistical analysis

First, we focussed on data from 2023, describing current reading practices in the US. We explored the proportion who read (participation rate), average time spent reading overall (total mean), average time spent reading just by participants who read (participation mean),²³ social context, and activity location.

We then aimed to test whether reading behaviours changed from 2003 to 2023. The cross-sectional data collected continuously from January 2003 to December 2023 (excluding 2020) was pooled and survey year used as the time variable. We used a series of regression models to examine time trends. Poisson regression with robust standard errors estimated prevalence ratios, testing whether participation rates changed over time, for reading overall and each activity separately. Robust Poisson regression was chosen over logistic regression because it directly estimates the risk ratio (here referred to as the prevalence ratio), which is more interpretable than the odds ratio when the outcome is common.²⁴ Linear regression tested whether the amount of time spent reading (total mean, participation mean) changed over time, overall and for each activity.

Next, we explored changes in social context and activity location. Given the low frequency of reading with different people, we tested whether the proportion of participants who read alone (vs with others) changed over time using Poisson regression with robust standard errors. Similarly, as participants mainly read at home, we tested whether the proportion of participants who read only in the home (own home/others' homes vs outside home) differed over time using Poisson regression with robust standard errors.

Finally, we examined whether reading differed across population groups. Using the data from 2023, we tested whether there were differences in reading according to individual characteristics. We tested the association between each individual factor (age, sex, race, education, income, metropolitan area, disability status) and 1) participation rate in separate robust Poisson regression models and 2) participation mean in separate linear regression models. We then pooled data across years and added interactions between individual characteristics and survey year (treated as a linear trend) for these outcomes in separate models, testing whether the disparities between sociodemographic groups changed over the study period. To visualise these interactions, we plotted the association between each characteristic and the participation rate stratified by survey year.

In all models, time (year) was treated as a linear exposure. We ran two additional sets of models for each outcome to test this assumption: 1) including a quadratic effect of time, and 2) treating time as categorical (the most complex model possible). We compared models using fit statistics (Akaike Information Criterion, Bayesian Information Criterion), Wald tests (quadratic vs linear model), and likelihood-ratio tests (categorical vs continuous model). Wald tests indicated that including quadratic terms did not improve model fit ($p > 0.05$), except for reading location. Although likelihood-ratio tests indicated that treating time as categorical did improve model fit over including it as a continuous linear exposure for most outcomes, likelihood-ratio tests may not be valid for models with probability weights or robust standard errors (as assumptions are violated). Given this, and to avoid overfitting and aid interpretation, time was treated as linear in all models.

ATUS generated weights to account for complex sampling, day of the week, and response rates across demographics and days. We used these weights to generate estimates for an average day representative of the US civilian non-institutionalised population aged 15 and over. Missingness was

generally low (<6%; Table S3), although ATUS replaced missing income data using values from previous CPS waves for 9% of participants. To account for data that were still missing, we used multiple imputation by chained equations (MICE).²⁵ We generated 20 imputed data sets using ordered logistic and logistic regression according to variable type. The imputation model included all variables used in analyses, sampling weights, and auxiliary variables (e.g. marital status, household size, children in the household, eldercare, employment status, area of residence). Findings from imputed analyses did not differ to complete case analyses (Table S8-S13), so imputed results are reported.

In sensitivity analyses, we tested whether outliers in the number of minutes spent reading (participation mean) influenced findings. Top-coding outliers at three standard deviations above the mean (185 minutes) or at the 99th percentile (420 minutes) did not alter the results, so analyses are reported without outliers removed or recoded. All analyses were performed using Stata 18.²⁶

Results

In total, 236,270 individuals completed the ATUS between 2003 and 2023 (excluding 2020). Participants were aged 15 and over (mean=45.14, SD=18.63). After weighting, 52% were female, 53% were married, 63% were employed, 81% identified as White race, 12% Black, 4% Asian, and 2% identified as American Indian, Alaskan Native, Hawaiian/Pacific Islander, or multiple racial groups (Table 1).

Overall reading

We focussed on reading during the average day. In 2023 (n=8,543), participants spent an average of 16 minutes (SD=52) reading per day. Yet only 18% of participants reported reading during the diary day; the remaining 82% did not read. The 1,899 participants who did read spent an average of 1 hour and 31 minutes (SD=90, median=60) reading. Engagement levels in 2023 were lower than the averages across the whole study period (2003-2023; Table S4).

We then examined changes over time. Figure 2 (panel A-C) shows how these measures fluctuated between 2003 and 2023. The engagement rate exhibited a gradual decline following a peak of 29% in 2004, with the lowest rate in 2023. Poisson regression indicated that the engagement rate decreased by 2% per year from 2003 to 2023 (prevalence ratio [PR]=0.98, 95% confidence interval [CI]=0.98, 0.98, $p<0.001$; Table S5).

For time spent reading, there was a decrease in the total mean, which was highest in 2004 (23 minutes). Using linear regression, time spent reading in the whole sample decreased by 0.37 minutes per year (coef=-0.37, 95% CI=-0.41, -0.32, $p<0.001$; Table S6). In contrast, participation time for those who read increased from 1 hour and 20 minutes in 2003. Linear regression models showed that this participation mean increased by 0.39 minutes each year (coef=0.39, 95% CI=0.24, 0.54, $p<0.001$).

Social context

In 2023, most participants read alone (60%), with a partner (17%), or with multiple people present (14%). It was less common to read in the presence of a child or grandchild (7%), other family member

(1%), or friend, colleague, neighbour, or acquaintance (1%). When looking at all 20 years of data, there was no evidence that the proportion of participants who reported reading in the presence of others (versus alone) changed over time (Figure 2D; Table S5).

Location

Among those who read in 2023, 92% did this in their own home and 2% in multiple locations during the diary day. Reading in other places was less common: 2% reported reading in others' homes, 1% in the workplace, 2% in other community locations (e.g. outdoors, whilst travelling), and 0.03% at a library. No participants reported reading for personal interest at school (but this was likely classified as doing research for a class for personal interest in 2023). Additionally, the sample included participants aged 15 and over, so relatively few were still in school.

As shown in Figure 2E, the proportion of those who read that did so outside the home decreased over the study period, from 9% in 2003 to 6% in 2023. In line with this, Poisson regression indicated that the proportion of participants who read outside the home decreased by 2% per year (PR=0.98, 95% CI=0.98, 0.99, $p<0.001$; Table S5).

Reading types

In 2023, reading for personal interest was more common (participation rate=16%) than reading with children (2%). Among those who did each activity in 2023, more time was spent reading for personal interest (mean=1 hour 37 minutes, SD=103) than reading with children (mean=28, SD=19; Figure 2F).

The proportion of participants who read for pleasure declined during the study period, from highs of 28% in 2004 (Figure 2G). There was evidence for this decrease over time, with a negative association between year and reading for personal interest (PR=0.97, 95% CI=0.97, 0.98, $p<0.001$). However, among those who did read for personal interest, there was an increase in the time spent reading, which was lowest in 2006 (1 hour 23 minutes) and peaked in 2023. Linear regression showed that the number of minutes spent reading increased by 0.62 minutes per year (coef=0.62, 95% CI=0.46, 0.77, $p<0.001$). In contrast, there was no evidence for changes in reading with children, which remained similar over time (Table S5-6).

The role of individual characteristics

Participation rate

We then explored the role of individual characteristics in overall engagement. Looking at participation rates in 2023 (Figures 3-4), females (vs males), older participants, those with higher education, and the highest level of family income were more likely to read. In contrast, those of Black race (vs White) and those with a disability (vs no disability) were less likely to read. However, there was no evidence for differences in overall engagement according to metropolitan status.

There was evidence that the associations between all individual characteristics and engagement rate differed according to survey year (Table S7). Stratified analyses indicated that the prevalence ratio for gender varied from 2003 to 2023, but did not show a large increase or decrease (Figure 4). In contrast,

the prevalence ratios for older participants compared to those aged 15-24 decreased over time, showing a narrowing of the gap between age groups. For race, the prevalence of reading was lower in Black than White participants, and the prevalence ratio got further from 1 (the null value) over time, showing an increasing disparity. By 2023, Black participants had a 45% lower prevalence of daily reading than White participants (PR=0.55, 95% CI=0.43, 0.70, $p<0.001$).

There were stark differences between educational groups, as the prevalence ratios for each level of education (compared to those with a maximum of high school education) all increased over time, showing widening gaps between groups. By 2023, those with postgraduate education had a 2.93 times higher prevalence of daily reading than those with high school or less education (PR=2.93, 95% CI=2.50, 3.45, $p<0.001$). A similar, although less pronounced, pattern can be seen for those with the highest level of income. By 2023, those with the highest income had a 1.57 times higher prevalence of daily reading than those with the lowest income (PR=1.57, 95% CI=1.31, 1.87, $p<0.001$). Although there were no differences in reading by metropolitan area in 2023, prevalence ratios increased throughout the study period, indicating an emerging gap with higher prevalence of reading for those in metropolitan (vs non-metropolitan) areas. There were also increasing disparities for disability status, with increasingly lower prevalence of reading among those with a disability (vs no disability) from 2003 to 2023.

Participation mean

Time spent reading was less clearly differentiated across population groups (Figures 5-6). In 2023, females (vs males) and the oldest participants (vs those aged 15-24) spent more time reading. Participants of Black (vs White) race and those with the highest (vs lowest) income level spent less time reading. There were no differences according to education, metropolitan area, or disability status.

Testing whether disparities in time spent reading changed over time, there was only evidence of differences for metropolitan areas (Table S7). However, there was very little evidence for differences in the time spent reading by those in metropolitan vs non-metropolitan areas over the study period (Figure 6). Although Figure 4 shows a large increase in time spent reading among those with a disability from 2018 to 2021, there was no evidence for linear trends in this relationship across the whole study period.

Discussion

In a large nationally representative sample of the US population, the proportion who read on an average day declined over the last 20 years, from highs of 29% in 2004 to lows of 18% in 2023; a relative decrease of 2% per year. This was driven by decreases in reading for personal interest, as there were not changes in reading with children over time. Despite the overall decrease, the amount of time spent reading by those who read increased slightly from 1 hour and 20 minutes a day in 2003 to 1 hour and 31 minutes in 2023. Most people reported reading alone and this remained stable over time. A large majority reported reading at home, as opposed to at a library, in the workplace, or other community locations. The proportion who read outside the home decreased over time. Rates of reading varied across population groups, as those who identified as female, of White race, were older, who had higher education, greater annual family income, lived in metropolitan areas, and did not have a disability were more likely to read in 2023. Disparities between population groups increased during the study period for

those of Black race, with lower education levels, less annual income, living in non-metropolitan areas, and with a disability.

The decline in reading for personal interest over the past 20 years in the US is consistent with the most robust previous evidence.^{12,14,15} This decline is concerning given earlier evidence for downward trends in reading for pleasure from the 1940s through to the start of our study in 2003, suggesting at least 80 years of continued decline in reading for pleasure.^{4,17,27} The extent of the decrease in our study is surprising given that the ATUS definition of reading for personal interest included not just reading a book, magazine, or newspaper and borrowing library books, but also listening to audiobooks/books on tapes and reading on a Kindle or other e-reader. It is possible that some digital reading types were missed prior to the inclusion of the Kindle/e-reader example in 2011, or the inclusion of audiobooks alongside tapes in 2020. Yet this is unlikely to explain our findings, particularly as most people who read on an electronic device or listen to audiobooks also read print books.^{16,28}

It has been suggested that declines in daily reading for personal interest are a result of changes in the function of reading and/or the replacement of reading by other media. People are reading less fiction in the US.¹⁴ They may instead read to fulfil practical needs, using alternative sources of information (online news, websites, forums).²⁹ People have a finite amount of leisure time, and limited cognitive capacity, resulting in an attention economy whereby activities are in competition.³⁰ Displacement theory suggests that increasing time and attention spent on other forms of media (e.g. digital media, social media) may replace reading for personal interest.³¹ Whilst this has been debated, declines in reading are correlated with increased use of other digital media in the US.¹² In Spain, TV watching is negatively associated with book reading, indicating that it may be replacing time spent on reading.²⁰ Among young people in particular, digital media use may be replacing reading for personal interest.^{15,32} Even if other activities are not deliberately chosen to displace reading, distraction by digital devices may still occur,^{4,33} preventing people from reading. Testing this was beyond the scope of our study but should be explored further in future research across countries.

Although reading with children did not change over time, rates of engagement were surprisingly low, with only 2% of participants reading with children on the average day. Overall, 21% of our sample had a child under 9 years (the age by which most can read independently)¹⁰ with them during the diary day. So a large majority of those with young children did not read with them. This is concerning given that regular reading during childhood is a strong determinant of reading ability and engagement later in life.³⁴ The low rates of reading with children may thus contribute to future declines in reading among adults. It is also unclear whether all types of reading provide equal benefits. Whilst reading with children has wide-ranging positive impacts for the child³⁴ and may facilitate bonding with the adult reader,³⁵ it might not have the same benefits for the adult as reading for their own personal interest. Within reading for personal interest, there could also be implications of the type of reading material engaged with. For example, reading anything may provide a distraction from stressors in one's own life and could widen worldviews (amongst other benefits),³ but reading non-fiction may involve fewer opportunities for developing creativity, imagination, theory of mind, and/or emotion regulation than reading fiction,³⁶ and reading news may even increase stress.³⁷ ATUS does not distinguish between the type, genre, or mode of reading, but future research should further explore how these have changed over time, and whether there are differences in the implications for literacy, employment, health, and wellbeing. Given the increasing frequency with which people use other sources of information (online news, websites, social

media) as opposed to print books,²⁹ it will also be important to explore whether these should be included in definitions of reading.

Although we could not include data from 2020, we were able to consider the long-term impacts of the COVID-19 pandemic. We expected to find increases in reading from 2019 to 2021 due to the rise in print book sales during the pandemic.¹⁹ Yet, we did not see an increase the proportion of participants engaged in reading. There may have been a slowing of the decline in reading, and a slight increase in the amount of time spent reading by those who read, but these differences were very small. Restrictions on movement thus were not accompanied by large increases in reading. Although surprising, this is in line with previous evidence.¹⁴ An exception was the proportion of people with a disability who read, and the amount of time they spent reading, which dramatically increased in 2021. Although this could be a result of the small group size and/or be influenced by outliers, it suggests that those with a disability were more likely to turn to reading during the pandemic, potentially whilst isolating at home due to health concerns. However, engagement levels then declined in this group to 2023, suggesting that, even if present, this was not a lasting effect.

There were further disparities in reading over the whole study period, with differences across all the population subgroups tested. The stable gender difference, with females consistently more likely to read than males, was similar to previous evidence.^{3,17,20,28,38,39} Although age differences changed over time, this was driven by a narrowing of the gap between age groups, with greater declines in those aged 66 and over (who were still more likely to read than those aged 65 and under). It is possible that this is a cohort effect, with younger generations reading less than previous cohorts.^{15,38} The most concerning disparities were those that increased over time, with widening gaps between Black and White racial groups, levels of education and income, metropolitan areas, and disability status. Participants of Black race, with the lowest education and income levels, living in non-metropolitan areas, and with a disability were least likely to read in 2003, and showed the steepest decline in reading to 2023, with increasing differences between population groups. These widening gaps contrast with most previous research, which has found stable or decreasing disparities.^{12,13,15,16,28} Yet, they are in line with inequalities in literacy among young people in the US.^{40,41} This demonstrates the urgent need for interventions to increase opportunities for reading among these groups.

Our findings have numerous implications for policy and practice. Reading policy often focusses on children and young people,⁴² as reading is fundamental to education, but policymakers must also consider adults, as reading has broader benefits for health and wellbeing, particularly for stress, depression^{5,6} and sleep disorders,⁷ which are all on the rise in the US.⁴³⁻⁴⁵ The American Library Association is tasked with ensuring equitable access to reading and advocating for adult readers through the Office for Literacy and Outreach Services. An executive order issued by the Biden administration aimed to promote and expand library services to strengthen public health and wellbeing,⁴⁶ but federal priorities changed from 2025. Additionally, relying on libraries may be challenging, given that only 0.3% of our sample reported reading at a library on an average day in 2023, with 0.5% visiting a library for any activity. Amongst other initiatives, reading also features heavily in NEA strategic plans. The NEA Big Read supports reading programs around the US, designed to unite communities through books.⁴⁷ From 2006 to 2022, the NEA provided more than \$25 million to over 1,800 NEA Big Read programs nationwide, reaching every Congressional district in the US. Over 6 million people have attended an NEA Big Read event.⁴⁷ Celebrity and online book clubs can also impact

reading habits. Oprah's Book Club is perhaps the most prominent example, as it has influenced bestseller lists for years. And yet our findings indicate that this is not enough; the proportion of the population reading for personal interest is still declining. It is possible that these initiatives are only reaching groups who already read, meaning further action is required targeting high-risk groups, particularly where disparities appear to be increasing. Monitoring will be vital to understand the impact of future interventions. Fortunately, the new National Arts Statistics and Evidence-based Reporting Center's (NASERC) Arts Indicators Project will build on our study, providing regular statistics on reading for pleasure and reading expenditure in the US from 2024 onwards.⁴⁸ Our findings show that initiatives aimed at those of Black race, with lower education levels, less annual income, living in non-metropolitan areas, and with a disability will be important. To support these initiatives, future research must identify the causes of declines in reading and show why disparities are widening.

This study has several strengths. We included over 236,000 people, with weights making estimates nationally representative of an average day in the US. Although response rates declined over time, ATUS measured all daily activities, so there may be less selection bias than surveys explicitly focussed on reading. Time use surveys are also less susceptible to recall bias than other surveys that require reporting over longer periods. Whilst overarching categories of reading for personal interest and reading with children remained consistent over time, specific examples of activities within these domains were updated, which is important to keep up with emerging ways of leisure reading. We also provide the first population-level data on trends in social context and location of everyday reading.

However, there are some limitations of the ATUS activity classifications. ATUS grouped various types of reading as they are infrequent when measured daily, preventing more detailed investigation, including separating different forms (e.g. digital, print) and genres (e.g. fiction, literature, social purpose). Assessing these types of leisure reading separately should be a priority for future research.⁴⁹ It is also possible that some digital/virtual reading was classified under other digital/virtual activities, particularly before the inclusion of kindles/e-books (2011) and audiobooks (2020) into the reading examples. Similarly, in earlier years (2003-2006), reading the Bible and scripture were also included in reading for personal interest, but these were re-categorised from 2007 onwards, and grouped with other participation in religious practices (so could not be included in our index). This may mean that we underestimated rates of total engagement, although, as outlined above, we expect any such misclassifications to have minimal effects on our findings. Further, reading on tablets, computers, or smartphones was not explicitly included in examples, making it unclear whether this behaviour would have been classified as reading for personal interest or technology use. Our reading measures are thus unlikely to have included activities such as reading blogs or the news online, which may be a form of reading for pleasure. Future surveys should aim to capture these types of reading, differentiating them from mindless scrolling. Additionally, in this study, we focussed on the average day. This cannot be compared with monthly or annual prevalence rates, as it typically leads to much lower estimates of engagement. Differences between daily and longer-term estimates of reading may partially be driven by the uneven distribution of reading throughout the year, with some mainly reading during holidays.¹⁷ However, ATUS collects data for 97-98% of days annually, including throughout the summer when people are likely to take vacations. Future studies should explore whether average daily patterns of engagement differ throughout the year. Additionally, the measures of sex (male, female; due to availability in ATUS) and race (White, Black, Asian, Other; due to small numbers in non-White groups) were overly simplistic. This approach conflates experiences across diverse sex, racial, and ethnic

groups, which might be problematic as these groups may not have equal opportunities to read. Future research should collect more nuanced data on sex and further explore the role of race and ethnicity in arts participation.

Overall, we found declines in daily reading over the last 20 years in the US. Although reading with children has not changed, people have become less likely to read for personal interest on the average day. There were disparities in rates of reading according to all individual characteristics assessed, with evidence of widening gaps for those of Black race, with lower education levels, less annual income, living in non-metropolitan areas, and with a disability. This is concerning given the wide-ranging benefits of reading. Our findings thus demonstrate the urgent need for more targeted strategies to increase opportunities for reading for the whole population, and particularly among high-risk groups. Continuing to monitor daily leisure reading levels, as well as the demographic and socioeconomic characteristics influencing reading, will be vital to understand the impacts of future policies.

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Competing interests

No authors report any competing interests.

Data sharing

This study used publicly available ATUS data, available from: <https://www.bls.gov/tus/data.htm>.

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