Dental Usage Under Changing Economic Conditions

Richard J. Manski, D.D.S., M.B.A., Ph.D. [Professor and Director],
Division of Health Services Research, Department of Health Promotion and Policy, Dental
School, University of Maryland

John F. Moeller, Ph.D. [Research Professor],
Division of Health Services Research, Department of Health Promotion and Policy, Dental
School, University of Maryland

Haiyan Chen, MD, Ph.D. [Assistant Research Professor],
Division of Health Services Research, Department of Health Promotion and Policy, Dental
School, University of Maryland

Jody Schimmel, Ph.D.,
Mathematica Policy Research, Inc

Patricia A. St Clair, Sc.B., and
RAND Corporation

John V. Pepper, Ph.D.
Department of Economics, University of Virginia

Abstract

Objective—The purpose of this article is to examine the relationship between changes in
household finances (wealth and income) and changes in dental utilization at the onset of the recent
recession in a population of older Americans.

Methods—Data from the Health and Retirement Study (HRS) were analyzed for U.S. individuals
aged 51 years and older during the 2006 and 2008 waves of the HRS. We estimated logistic
models of (1) starting and (2) stopping dental use between 2006 and 2008 survey periods as a
function of changes in household wealth and income, controlling for other potentially confounding
covariates.

Results—We found that only when household wealth falls by 50 percent or more were older
adults less likely to seek dental care. Changes in household income and other changes in
household wealth were not associated with changes in dental utilization among this population.

Conclusions—Older Americans' dental care utilization appeared to be fairly resilient to changes
in household finances; only when wealth fell by 50 percent or more did individuals decrease
dental use. This finding might extend to other health care services that are preventive, routine, and
relatively inexpensive.

Keywords

Dental; Utilization; Dentistry; Insurance; Coverage; Wealth; Income; Retirement

Mailing Address: Richard J. Manski, D.D.S., M.B.A., Ph.D., Professor and Director, Division of Health Services Research,
Department of Health Promotion and Policy, Dental School, University of Maryland, 650 West Baltimore Street, Baltimore, Maryland
21201, 410-706-7245 (Voice) - 410-706-4031 (Fax), rmanski@umaryland.edu.

INTRODUCTION

The four-year period between 2004 and 2008 witnessed the onset of the economic crisis that still persists today. During 2008 the Dow Jones Industrial Average fell 33 percent, while the U.S. unemployment rate was half again higher in December of that year than in January. [1] Although the trough of the recession was not reached until after this period, the onset of the downturn served as a warning to households to more carefully examine how to spend their money. Households facing significant financial constraints may have cut out all but the most needed spending, foregoing things seen as less critical. For many, this could include dental care; despite the potential for serious oral health consequences and larger expenditures down the road, seeing a dentist may be seen as something easily postponed.

Anecdotally, fewer people have been seeking dental care during the recession, likely because of diminished household resources or a lack of health insurance resulting from being out of work. [2,3] While income may be the key driver of the decision to seek care, whether a household has sufficient assets to buffer any income losses may also play a large role. Indeed, a recent cross-country study of persons aged 18 to 65 found that the wealth losses during the downturn have contributed to decreases in the use of routine medical care particularly in countries such as the U.S. lacking universal health coverage. [4]

Assets may be particularly salient to older households, who may have decreased incomes as a consequence of retirement and may recognize that they will need to draw down on their wealth during retirement. Indeed, economic models predict that around the time of retirement, households should experience relatively little changes in consumption as a result of income drops due to retirement; they should have anticipated (and planned for) income changes. [5–7] For the elderly then, the combination of income and wealth may be a more complete measure of economic status. [8]

Fluctuations in income and wealth have become more common during the economic recession, as individuals have become unemployed or experienced changes in assets as a result of housing market declines or stock market turbulence. Such changes may become increasingly important considerations for older households, as a higher proportion of individuals have 401(k) or defined contribution pension plans with holdings in the stock market, as opposed to defined benefit packages which paid the same benefits, regardless of macroeconomic conditions during retirement. Understanding the determinants of dental care use among older populations will become increasingly important as the Baby Boom generation ages and a higher proportion of older adults enter their retirement years with teeth.

Earlier work found that older individuals with higher household wealth holdings were more likely to seek dental care, even controlling for insurance coverage and household income. [9]. Previous work has also shown that lower levels of household income are associated with a lower likelihood of older adults newly seeking dental care and a higher likelihood of stopping dental care. [10] Thus, it stands to reason that changes in household wealth and income associated with the outset of the recent recession may also be important determinants in the decision to seek dental care among older adults. More specifically, we hypothesize that declines (increases) in household wealth and income may be associated with a decreased (increased) likelihood of seeing a dentist.

To test this hypothesis, in this paper we used data from the Health and Retirement Study from 2006 and 2008 to explore how changes in household wealth and income were correlated with changes in dental care seeking, holding constant a range of individual characteristics. Although these data predate the trough of the recent economic recession, we believe that they provide preliminary evidence that the observed declines in dental care

during the recession may be partially explained by diminished financial resources, at least for older households.

METHODS

The Health and Retirement Study (HRS) is a nationally representative longitudinal household survey in the U.S. that collects self-reported data from interviews with individuals over age 50 and their spouses every two years. We use the 2006 and 2008 waves of the HRS for our study containing 18,469 and 17,217 sampled persons, respectively. Administered by the Institute for Social Research (ISR) at the University of Michigan and sponsored by the National Institute on Aging, the HRS is useful for the study of aging, retirement, and health among older populations in the United States. [11,12]

Each HRS respondent is asked a large battery of questions including information about demographics; income and assets; physical and mental health; cognition, family structure and social supports; health care utilization and costs; health insurance coverage; labor force status and job history; and retirement planning and expectations. Because of the breadth of data available across health and labor force measures and the large sample of older Americans, the HRS is an excellent data source for assessing the association between dental coverage, use, and retirement among an older population.

Dependent Variables

Dental use in our study was defined by self reports in the HRS of whether or not a person visited the dentist for dental care at least once during the two-year period prior to the survey in 2006 and in 2008. To create the two dependent variables for our study, we first identified persons with at least 1 dental visit in the 2-year period prior to the 2006 interview. We then defined a binary variable for persons "stopping use" from among this group who did not have a dental visit in the subsequent 2-year period prior to 2008. For the second dependent variable we next identified persons with no dental visits in the 2-year period prior to the 2006 interview. We then defined a binary variable for those "starting dental use" from among this group as those with at least 1 dental visit in the subsequent 2-year period prior to 2008.

Independent Variables

Dental insurance coverage in the HRS was identified in one of two ways: either a) the respondent reported seeing a dentist for dental care and reported having expenses completely, mostly, or partially covered by insurance; or b) the respondent did not see a dentist but reported that they would expect any costs to be covered by insurance if he or she did need to see a dentist. We constructed covariates for transitions in dental coverage between the 2006 and 2008 HRS waves for those persons either losing or gaining dental coverage and for those persons either always or never covered.

The HRS wealth measure we used was total net value of self-reported wealth including the net value of any secondary residence owned by the household. The HRS collects data on separate components of wealth and debt and then sums them to produce a total net value of wealth. Responses are bracketed for cases in which respondents cannot provide exact data. [13–15] Wealth components include the net value of primary, secondary and other real estate, vehicles, businesses, tax-deferred retirement savings accounts including Individual Retirement Accounts (IRAs) for employed workers and Keogh accounts for self-employed individuals or those who own their own incorporated businesses, stocks, mutual funds, investment trusts, checking, savings and money market accounts, interest earning savings

instruments issued by banks (Certificates of Deposit (CDs)), government savings bonds and Treasury bills, bonds, bond funds and the value of all other savings and debt. [13]

We constructed a relative measure of wealth as an independent variable in our study indicating which wealth decile a person's household belongs. We split households in our 2006 sample into single and couple households for our relative measure because of disparities in wealth by household composition. Couple households were defined as persons who were married or "living together as though married" in the HRS, in addition to infrequent cases in which HRS couple's status did not indicate marriage or partnership and the household had two members. [13] Single households comprised all other households in our sample not meeting the requirements to be defined as a couple household.

To develop our independent variable for a change in wealth between the 2006 and 2008 HRS waves, we first identified the 11,298 households that were in both waves of the HRS. From these households, we restricted our sample to the 10,717 households whose composition did not change between HRS waves. An additional 355 households were dropped because their household weight was zero in the 2006 HRS producing a final sample of 10,362 households and 15,506 persons in these households. For the change in wealth and income variables, we dropped an additional 512 households with zero wealth in at least one of the two HRS waves, with zero household income in the 2006 wave, or with household income less than zero or missing in either period. We constructed percentage changes in wealth for the remaining 9,850 households and identified the 198 outlier households in the top and bottom one percent of the distribution. Based on a study of potential measurement error in self-reports of HRS asset data, we conducted our initial analyses both with and without these 198 outlier households as a sensitivity test for our results. [16] Ultimately results were not sensitive to the outlier households so they were left in our sample for our estimates.

We initially adopted the same percentage wealth change brackets as in the Lusardi, Schneider, Tufano study [4]. In that study, they considered increases greater than 10 percent, both increases and decreases in wealth less than 10 percent, and decreases between 10 and 30 percent, 30 and 50 percent, and above 50 percent. However, our preliminary analysis of dental use behavior between periods caused us to collapse declines in household wealth into one bracket between 10 and 50 percent and to expand the bracket for increases in wealth of more than 10 percent into two categories.

To measure household income, we used a composite measure that includes the job-related earnings of the HRS respondent and his/her spouse, pensions, annuities, capital income, income from Social Security retirement or disability programs, unemployment insurance, worker's compensation, other government transfer programs, and other income accrued to the respondent or spouse. Using this measure, we constructed independent variables for household income relative to the poverty threshold in 2006 and for percentage changes in household income between the 2006 and 2008 waves in an analogous way as that for wealth. After omitting persons with zero person-level 2008 HRS wave weights, our analytic sample consisted of 9,620 households containing 14,484 older adults.

Retirement status has been shown to be highly correlated with dental coverage and use. [17,18] In the 2006 and 2008 HRS surveys, we defined respondents as fully retired if at the time of the survey interview they were not working for pay or self-employed and either (1) said that they were completely retired, or (2) reported their sole employment status as retired. Individuals were classified as partially retired if they were not fully retired but reported retirement and either working or looking for work. Individuals not classified as fully or partly retired were designated as in the labor force if they reported working for pay

or reported their labor force status as working full-time, part-time, or unemployed. Persons were classified as not retired and out of the labor force if they were disabled, not in the labor force or never in the labor force. We constructed four independent transition variables for persons becoming fully retired, partially retired, not retired in the labor force, and not retired out of the labor force between the 2006 and 2008 HRS waves. We also constructed four independent variables for persons who did not change their retirement/labor force status between waves but who remained fully retired, partly retired, in the labor force, or not retired out of the labor force between waves.

Additional independent variables in our study were drawn from the 2006 HRS wave and included age, race/ethnicity, sex, education, marital status, household size, health status, and permanent teeth status (all missing or not).

The HRS core sample design is a multistage area probability sample of households, so all estimates and statistics reported were computed taking into account this design with the use of the software packages SUDAAN and STATA. [19,20] Weighted results are provided in the tables by using the 2008 HRS wave person-level weights. We tested differences in our descriptive tables by using Z scores having asymptotic normal properties at the 0.05 level of significance. Unless otherwise stated, all reported results are significant at least at the .05 level.

RESULTS

Overview

Percentage changes in household wealth are reported by population characteristics and by transitions in income, dental coverage, and retirement (Table 1). Dental care use transitions are reported by population characteristics and by transitions in wealth, income, dental coverage and retirement in Table 2. Table 3 shows the unadjusted and adjusted odds ratio estimates from logistic regressions of the probabilities of stopping and starting dental visits between the 2006 and 2008 survey periods. A sample size of 14,247 persons was used to produce estimates in Tables 2 and 3 after omitting an additional 237 persons (and 192 households) from the sample used for Table 1 because of missing data on dental use or covariates in the tables. Unadjusted odds ratios were estimated from logistic regression equations without control variables. All covariates were included in the logistic regressions estimating the adjusted odds ratios for stopping or starting dental use. We discuss the adjusted estimates and note that differences from the unadjusted estimates occur primarily because of correlations between covariates in the full regression models that were omitted from the unadjusted models.

Table 1 shows that persons living in households with the largest percentage increases in household wealth over this period were most likely to incur the largest percentage increases in household income over the same period. For example, 31 percent of older adults in households with income increasing 50 percent or more experienced household wealth increases of 50 percent or more over this period compared to only 21 percent of those living in households with declining incomes of 50 percent or more. On the other hand, 24 percent of persons living in households with declines in income of 50 percent or more lost 50 percent or more of their wealth. This was disproportionately more than persons also losing 50 percent or more of their household wealth over this period who were living in households with increases in household income between 10 and 50 percent (15 percent) or 50 percent or more (17 percent).

In Table 1 persons living in poor and low income households compared to those in middle or high income households were more likely to have lost 50% or more of their household

wealth. Twenty-eight percent of older adults in poor households compared to only 15 percent of those in high income households lost 50 percent or more of their wealth over this period. On the other hand, the largest percentage increases in household wealth came from persons living in households with the lowest income and wealth during the 2006 wave compared to persons in higher income and wealthier households.

Individuals in households with the largest percentage losses in household wealth between 2006 and 2008 are also characterized as more likely to be 80 and older, non-White, not high school graduates, widowed or divorced, in fair or poor health, missing all permanent teeth, not retired or not in the labor force both periods or entering that status in 2008, and either acquiring or dropping dental insurance coverage over this period compared to, respectively, older adults under 80 years, Hispanic or Black, non-Hispanic, high school or college graduates, married, in good, very good, or excellent health, not missing all permanent teeth, fully or partially retired in both periods or becoming partially retired during the 2008 wave, and either with or without dental coverage over this entire period.

In Table 2 we examine the bivariate relationships between dental use transitions for older adults and the independent variables in our study. We find in the table that the majority of older Americans reported using dental care in both the 2006 and 2008 HRS waves (58%), while about a quarter of them failed to visit the dentist in either period. There was a fair amount of transition as about 14% of those with a dental visit in the 2 years prior to the 2006 survey period did not have dental visit during the 2 year 2008 survey period (i.e. stopped dental use). About 23% of those without a dental visit before the 2006 survey period had a visit during the 2 year 2008 survey period (i.e. started dental use between survey periods).

Logistic Regression Results

Wealth Effects—To help interpret the estimates in Table 3, the adjusted odds ratio estimate of 1.723 for older adults with dental use in the two years prior to 2006 and living in a household with a decline in wealth of 50 percent or more between survey periods indicates that the odds of such a person stopping dental use by 2008 were nearly 75 percent greater than those of older adults living in households with wealth changes in either direction of less than 10 percent. The odds in this instance are defined as the probability of stopping dental use divided by the probability of not stopping dental use. The associated 95 percent confidence interval estimate reported in parentheses in the table is between 1.304 and 2.276. Changes in household wealth had no effect on the odds that older adults will begin using dental care over the same period. We also find that older adults living in the least wealthy households during the 2006 wave were more likely to drop and less likely to begin dental use between survey periods compared to those living in the wealthiest households.

Income Effects—Changes in household income between survey periods had no influence on the odds of older adults changing their dental use. We did find however that persons living in poor households in 2006 were nearly 100 percent more likely to stop dental visits between periods than those living in high income households. Unlike the unadjusted results, household income in 2006 had no influence on starting dental visits between periods in the adjusted results.

Coverage—Older adults who have dental coverage in both periods are over 50 percent less likely, and those who lost coverage between periods are over 100 percent more likely, than those who are not covered in either period to stop using dental care. Older adults with dental coverage in both periods, and those who gain dental coverage between periods, are each over 50 percent more likely to start dental use than those without dental coverage in each period.

Other Effects—Older adults more likely to stop dental use were male (unlike the unadjusted estimate); black non-Hispanic or "other" non-Hispanic; not college graduates; widowed or divorced; missing all permanent teeth; in fair or poor health status; becoming not retired but out of the labor force; and in households size 3 or more (unlike the unadjusted estimate) compared to older adults who were, respectively, female, white non-Hispanic, college graduates, married, not missing all their permanent teeth, in excellent or very good health status, in the labor force in both periods; and in single person households.

Those less likely to start using dental care between periods were characterized as not high school graduates, missing all permanent teeth, and not retired but out of the labor force in both periods compared to those older adults who were, respectively, college graduates, not missing all their permanent teeth, and in the labor force in both periods.

Discussion

Given earlier findings about the relationship between wealth levels and the decision to seek dental care, it may not be surprising that changes in wealth are associated with changes in dental care utilization. What is surprising is that older adults appear to be fairly resilient to wealth fluctuations; only once wealth drops by 50% or more do households have an increased likelihood of stopping dental care use. We tested sensitivity to wealth changes at various thresholds; only at declines of 50% or more did we find an effect. For households nearing or in retirement, losses of wealth between 10% and 50% can still have important consequences for financial well-being; it is interesting that even with such losses, households did not disrupt their dental care use patterns. This indicates that until wealth losses are substantial, individuals do not completely forego dental care.

The wealth results stand in contrast to income; in earlier work we found correlation between levels of income and dental care use. In our current study however, we found no correlation between changes in household income and changes in seeking dental care. This is actually consistent with economic models of consumption around the time of retirement; households optimally would have anticipated retirement and therefore be less sensitive to income fluctuations around that time. [5,7,21].

These results otherwise generally agree with our previous analysis of changes in dental use by this population that we conducted with earlier 2004 and 2006 waves of the HRS, though those results did not incorporate wealth status or changes in income and wealth between periods and did not cover a period that included the onset of the current recession. [10]

There are three key caveats to interpreting our findings. First, our wealth measure includes both liquid and non-liquid types of wealth, from checking accounts to pension balances to housing wealth. Thus, large declines in assets could be due to a range of factors including: decreases in pension holdings due to stock market fluctuations, increases in consumer debt reducing household net worth, the sale of a business, or declines in the value of real estate holdings. It is conceivable that older households may be more sensitive to the balance in their stocks or pension accounts than to the balance of their housing wealth, particularly if they plan on staying in their house for the remainder of their lifetime. In future work, we plan to explore whether dental usage is more sensitive to certain types of wealth changes than others.

Second, even though we controlled for a range of personal characteristics in our logistic model, we cannot verify that wealth changes are solely capturing the effects of changing finances. As suggested above, households who experience a 50% decline in wealth may have experienced significant life events, including a major health event of one's self or

spouse or taking on debt to assist other family members. Thus, it is possible that the wealth effects we are observing are proxy measures for a tumultuous time leading to a lack of focus on one's own dental care.

Third, our measure of dental care use is only able to capture any use over a two year interval. Thus, it is quite possible that individuals who experience wealth declines of less than 50% alter their dental seeking behavior in a way not captured by our measure. For example, someone with lesser wealth declines may only see the dentist once every year instead of once every six months, or may forego more expensive procedures like crowns or root canals. Neither of these possibilities is picked up by our measure of dental use. Nonetheless, even if individuals with lower wealth losses cut back on dental care, the fact that they still had at least one visit during the two year period does indicate that they did receive some dental care. In a module asked to a subset of respondents in the 2010 HRS, we expect to have more detailed information about the type of dental care usage. Unfortunately, that module will only be collected once so we will not be able to look at changes over time, though we do plan to examine types of usage relative to wealth and income levels.

The failure to find any association between changing household economic circumstances and dental usage, other than for declines in wealth of 50 percent or more, may have several explanations. We observed considerable volatility in wealth changes across HRS survey waves prior to 2006 for households in the upper and lower one percent of this distribution between 2006 and 2008. If household members viewed these changes as transitory in nature, rather than long term or permanent changes, then they would be less likely to alter their consumption patterns, including those for dental services. [21] Given the long term history of gyrations in the stock market, any reported losses from this source are unlikely to be considered of a permanent nature. [1] Measurement errors in HRS asset reporting could also bias downward coefficient estimates of the association between changes in household net worth and dental usage. [16]

Finally, as we pointed out in our introduction, our analysis actually predates the trough of the downturn. Although Gross Domestic Product declined during the last two quarters of 2008 and the Dow Jones Industrial Average (DJIA) declined from 13,261 at the beginning of 2008 to 8,776 by the end of the year, the trough in the decline in real GDP and the DJIA and the peak in unemployment rates were not reached until 2009. [1] As future waves of HRS data become available, we will be able to test the hypothesis that the lengthening duration of the recession might be felt among households with losses of wealth less than 50%; people's concerns about the overall economy and direction of the country coupled with their own economic hardship may make their dental care decisions less resilient to changes in wealth than they might have been at the outset of the downturn. Our results together with those of Lusardi, Schneider, and Tufano suggest that while medical spending overall is sensitive to wealth, there may be variation in the elasticity of demand for medical care with respect to wealth by type of service. [4] For example, services which are less costly such as doctor's visits may be less sensitive to wealth fluctuations than procedures that are costly. Holding price constant, it is unlikely people would forego emergency room visits, but may forego elective outpatient surgery if wealth declined significantly. Dental visits, which Lusardi, Schneider, and Tufano did not cover in their study, may be similar to visits to the dermatologist or ophthalmologist--necessary for one's overall health, but potentially seen as able to be postponed without a significant impact. Thus, it seems likely that fluctuations in wealth might not affect use of those types of services unless wealth declines were significant, similar to our findings for dental care.

Acknowledgments

References

1. Economic Report of the President. 2010. available at http://www.gpoaccess.gov/eop/tables10.html

2. Mitchum, Robert. Chicago Tribune. Mar 23. 2009 Recession Taking Toll on Dental Care, Too.

3. Donnelly, Julie. Boston Business Journal. Jan 26. 2009 Recession takes toll on dental office.

4. Lusardi, A.; Schneider, D.; Tufano, P. Working Paper 15843. Cambridge, MA: National Bureau of Economic Research; Mar. 2010 The Economic Crisis and Medical Care Usage.

5. Deaton, A. Research Program in Development Studies and Center for Health and Wellbeing. Princeton University; Mar. 2005 Franco Modigliani and the Life Cycle Theory of Consumption. Available at: http://www.princeton.edu/~deaton/downloads/romelecture.pdf

6. Modigliani, F.; Brumberg, R. Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data. In: Kurihara, KK., editor. Post-Keynesian Economics. New Brunswick, NJ: Rutgers University Press; 1954. p. 388-436.

7. Ando A, Modigliani F. The Life Cycle Hypothesis of Saving: Aggregate Implications and Tests. American Economic Review. Mar; 1963 53(1):55–84.

8. Hurd MD. The Economic Status of the Elderly. Science. May.1989 244:659–664. [PubMed: 2655090]

9. Manski RJ, Moeller JF, St Clair PA, Schimmel J, Chen H, Pepper JV. Wealth Effect and Dental Care Utilization in the U.S. Journal of Public Health Dentistry. In Press.

10. Manski RJ, Moeller JF, St Clair PA, Schimmel J, Chen H, Pepper JV. The Influence of Changes in Dental Care Coverage on Dental Care Utilization Among Retirees and Near-Retirees in the United States, 2004–2006. American Journal of Public Health. Oct; 2011 101(10):1882–1891. [PubMed: 21852656]

11. Growing Older in America: The Health and Retirement Study. Bethesda, MD: National Institute on Aging; 2007. p. 41Available at http://hrsonline.isr.umich.edu

12. RAND HRS Data, Version H. Produced by the RAND Center for the Study of Aging, with funding from the National Institute on Aging and the Social Security Administration; Santa Monica, CA. February 2008;

13. St Clair, P.; Blake, D.; Bugliari, D. RAND HRS Data Documentation, Version J. Santa Monica, CA: RAND Center for the Study of Aging, Labor and Population Program; Mar. 2010

14. Smith JP. Racial and Ethnic Differences in Wealth in the Health and Retirement Study. Journal of Human Resources. 1995; 30:S158–S183.

15. Smith JP. Wealth Inequality Among Older Americans. Journal of Gerontology. 1997; 52B:74–81.

16. Venti S. Economic Measurement in the Health and Retirement Study. Forum for Health Economics & Policy. 2011; 14(3):1–18.

17. Manski RJ, Moeller JF, Schimmel J, St Clair PA, Chen H, Magder L, Pepper JV. Dental Coverage and Retirement. Journal of Public Health Dentistry. 2010; 70:1–12. [PubMed: 19694939]

18. Manski RJ, Moeller JF, Chen H, St Clair PA, Schimmel J, Magder L, Pepper JV. Dental Care Utilization and Retirement. Journal of Public Health Dentistry. 2010; 70:67–75. [PubMed: 19765203]

19. Research Triangle Institute. SUDAAN Software for analysis of correlated data. Release 6.40. Research Triangle Park, NC: Research Triangle Institute; 1995.

20. Statacorp. Stata Statistical Software: Release 7.0. College Station, TX: Stata Corporation; 2001.

21. Friedman, M. A Theory of the Consumption Function. Princeton University Press; 1957.

Table 1

Population Characteristics of Older Americans by the Size Distribution of Percentage Changes in Household Wealth, 2006–2008 HRS

	Population (1000's)	Change in Household Wealth				
		Increase 50% or Greater	50% > Increase > 10%	Increase LE 10% or Decrease LE 10%	10% < Decrease < 50%	Decrease 50% or Greater
Total	66,771	23.65	17.32	16.61	24.38	18.03
		0.67	*0.47*	*0.55*	*0.60*	*0.45*
Household Income[a]						
Poor	4,366	32.82	14.23	9.29	15.73	27.93
		2.36	*1.61*	*1.40*	*1.69*	*2.13*
Low Income	10,184	27.84	13.17	12.43	22.06	24.50
		1.43	*0.85*	*0.90*	*1.30*	*1.06*
Middle Income	19,088	23.91	16.65	16.70	25.35	17.39
		1.16	*0.97*	*0.79*	*0.99*	*0.92*
High Income	33,133	21.01	19.39	18.81	25.67	15.12
		0.94	*0.76*	*0.77*	*.77*	*0.67*
Percentage Change in Household Income, 2006–2008						
Increase 50% or Greater	12,238	30.87	16.21	14.62	21.55	16.75
		1.04	*0.99*	*1.02*	*1.19*	*1.09*
50% > Increase > 10%	15,081	24.13	18.50	18.43	23.74	15.20
		1.36	*1.07*	*1.21*	*1.37*	*0.95*
Increase LE 10% or Decrease LE 10%	18,073	20.84	18.28	17.04	26.83	17.01
		0.91	*0.87*	*1.01*	*1.12*	*0.96*
10% < Decrease < 50%	14,399	21.81	17.22	16.39	24.25	20.33
		1.43	*0.97*	*1.05*	*1.16*	*0.89*
Decrease 50% or Greater	6,980	21.03	14.43	15.56	24.65	24.33
		1.55	*1.57*	*1.36*	*1.74*	*2.15*
Household Wealth Deciles						
1 to 3	17,784	40.49	11.82	8.45	15.55	23.69
		1.34	*0.74*	*0.82*	*1.01*	*0.87*
4 to 6	20,802	23.10	19.96	16.71	24.09	16.14

	Population (1000's)	Change in Household Wealth				
		Increase 50% or Greater	50% > Increase > 10%	Increase LE 10% or Decrease LE 10%	10% < Decrease < 50%	Decrease 50% or Greater
		1.09	*0.97*	*0.82*	*0.89*	*0.83*
7 to 9	21,202	14.82	19.46	22.51	30.62	12.59
		0.80	*0.96*	*0.87*	*1.01*	*0.78*
10	6,982	9.24	16.98	19.20	28.80	25.78
		1.24	*1.59*	*1.35*	*1.58*	*1.95*
Age in years						
51 to 64	35,333	25.98	16.99	15.16	23.81	18.06
		1.00	*0.77*	*0.91*	*0.97*	*0.70*
65 to 69	10,766	21.21	18.13	19.20	24.73	16.73
		0.91	*0.86*	*0.94*	*1.03*	*0.98*
70 to 74	8,847	18.81	18.96	20.06	25.99	16.18
		1.08	*1.06*	*1.04*	*1.22*	*0.94*
75 to 79	4,711	19.88	16.58	18.93	26.32	18.29
		1.37	*1.17*	*1.35*	*1.51*	*1.39*
80 and older	7,114	24.30	16.16	14.08	23.42	22.04
		1.02	*1.08*	*1.02*	*1.20*	*1.20*
Sex						
Male	35,774	23.62	18.31	17.32	25.01	15.74
		0.81	*0.66*	*0.74*	*0.86*	*0.55*
Female	30,996	23.69	16.18	15.80	23.65	20.68
		0.89	*0.66*	*0.71*	*0.71*	*0.83*
Race						
Black Non-Hispanic	5,398	31.99	14.14	9.29	19.59	24.99
		1.58	*1.43*	*0.94*	*1.28*	*1.24*
Hispanic	4,264	24.13	14.22	10.97	23.87	26.81
		1.97	*1.39*	*1.08*	*1.98*	*1.88*
White Non-Hispanic	55,312	22.91	17.73	17.79	25.02	16.55
		0.74	*0.56*	*0.62*	*0.68*	*0.53*
Other	1,781	20.64	21.82	15.93	19.47	22.14

	Population (1000's)	Change in Household Wealth				
		Increase 50% or Greater	50% > Increase > 10%	Increase LE 10% or Decrease LE 10%	10% < Decrease < 50%	Decrease 50% or Greater
		2.62	*3.69*	*3.18*	*2.28*	*3.30*
Permanent Teeth						
All Missing	9,980	27.44	15.09	12.96	21.61	22.90
		1.29	*1.07*	*1.05*	*1.19*	*1.27*
Not Missing All	56,778	22.99	17.72	17.26	24.87	17.16
		0.74	*0.53*	*0.58*	*0.67*	*0.48*
Education						
Some or No School	10,212	27.40	14.75	11.12	21.77	24.96
		1.12	*1.03*	*1.06*	*0.99*	*1.08*
High School Graduate	38,888	23.56	16.60	16.80	24.81	18.23
		0.81	*0.58*	*0.54*	*0.91*	*0.59*
College Graduate	17,624	21.71	20.44	19.25	25.00	13.60
		1.29	*0.95*	*1.12*	*0.97*	*0.75*
Marital Status						
Married	45,896	22.32	18.36	17.62	25.94	15.76
		0.77	*0.63*	*0.69*	*0.82*	*0.66*
Widowed, Divorced	18,593	25.89	15.19	14.14	21.25	23.53
		0.93	*0.59*	*0.67*	*0.89*	*0.77*
Never Married	2,272	32.29	13.82	16.17	18.73	18.99
		2.40	*1.99*	*2.38*	*2.22*	*2.26*
Household Size						
One	13,964	25.47	16.13	15.17	21.71	21.52
		1.00	*0.70*	*0.70*	*0.96*	*0.93*
Two	35,409	22.34	18.52	18.43	25.86	14.85
		0.76	*0.73*	*0.75*	*0.84*	*0.73*
Three or more	17,397	24.88	15.83	14.08	23.51	21.70
		1.32	*0.99*	*0.93*	*1.10*	*1.10*
Health Status						
Excellent/Very Good	31,005	21.79	19.05	18.90	24.76	15.50

	Population (1000's)	Change in Household Wealth				
		Increase 50% or Greater	50% > Increase > 10%	Increase LE 10% or Decrease LE 10%	10% < Decrease < 50%	Decrease 50% or Greater
		0.88	0.82	1.03	0.80	0.67
Good	20,021	24.89	17.64	15.18	24.88	17.41
		1.17	*0.87*	*0.94*	*1.09*	*0.81*
Fair/Poor	15,711	25.74	13.54	13.91	23.02	23.79
		1.22	*0.86*	*0.91*	*0.98*	*0.97*
Retirement/Labor Force Status Transitions: 2006–2008						
Entered Full Retirement	5,906	26.73	14.48	15.37	24.12	19.30
		1.87	*1.29*	*1.71*	*2.06*	*1.52*
Entered Partial Retirement	3,379	24.22	17.46	16.27	27.78	14.27
		2.56	*1.88*	*1.93*	*2.60*	*2.13*
Entered Labor Force	1,558	29.71	15.85	13.97	20.91	19.56
		3.41	*3.22*	*2.97*	*3.26*	*3.67*
Entered Not in the Labor Force, Not Retired	2,021	26.03	16.19	11.78	22.07	23.93
		3.23	*3.25*	*2.33*	*3.31*	*2.87*
Always Fully Retired	25,688	22.63	17.78	17.67	25.00	16.92
		0.73	*0.77*	*0.66*	*0.89*	*0.59*
Always Partially Retired	4,309	22.79	22.63	18.93	23.50	12.15
		2.47	*2.34*	*2.18*	*1.74*	*1.37*
Always Not in the Labor Force, Not Retired	2,843	21.81	12.68	17.90	21.53	26.08
		2.05	*1.93*	*2.17*	*2.77*	*3.14*
Always In the Labor Force	20,320	23.68	17.47	15.81	24.49	18.55
		1.04	*1.09*	*1.11*	*1.28*	*0.83*
Dental Coverage Transitions: 2006–2008						
Always Covered	27,601	23.14	18.49	17.19	26.34	14.84
		0.97	*0.84*	*0.82*	*0.95*	*0.70*
Lost coverage	5,398	26.59	15.27	11.17	21.67	25.30
		2.18	*1.70*	*1.22*	*2.07*	*1.75*
Gained Coverage	4,936	22.99	13.99	13.73	22.27	27.02

	Population (1000's)	Change in Household Wealth				
		Increase 50% or Greater	50% > Increase > 10%	Increase LE 10% or Decrease LE 10%	10% < Decrease < 50%	Decrease 50% or Greater
		1.79	*1.44*	*1.76*	*1.95*	*1.91*
Never Covered	28,835	23.71	17.16	17.57	23.37	18.19
		0.81	*0.63*	*0.76*	*0.74*	*0.68*

Source: RAND HRS Data, Version H. Produced by the RAND Center for the Study of Aging, with funding from the National Institute on Aging and the Social Security Administration. Santa Monica, CA (February 2008).

Note: Row percentages are reported in the table. Characteristics are based on 2006 HRS data except for retirement/labor force, income, and dental coverage transitions. Persons with missing data for race/ethnicity, education, marital status, and health status are included in the population total but excluded from the respective categories. Persons never in the labor force are included in the not retired, not in the labor force group. Sample is restricted to persons in households present in both the 2006 and 2008 HRS, without any changes in household composition between periods, without zero household weights, without zero household wealth in either period, and without household income less than zero or missing in either period. An additional 454 individuals with non-positive person weights were omitted to produce a sample of 14,484 older adults in 9620 households for this table. Person-level weights from the 2008 HRS were used for the population estimates in the table.

Standard errors appear beneath estimates of the percentages of the population in the shaded rows of the table.

a Where low income refers to persons in families with incomes 101 percent to 199 percent of the poverty line; middle income, 201 percent to 400 percent of the poverty line; and high income, over 400 percent of the poverty line. Poor persons are at or below 100 percent of the poverty line including persons in families with negative income.

Table 2

Population Characteristics of Persons Age 51 years and Older With and Without a Dental Visit in the Previous 2 Years: Health and Retirement Study, United States, 2006 and 2008.

Population Characteristics	Total 2006 and 2008 Population in Thousands	Dental Care Utilization During the 2006 and 2008 Survey Periods		Dental Care Utilization During the 2006 Survey Period Only		Dental Care Utilization During the 2008 Survey Period Only	
		Yes % (SE)	No,[b] % (SE)	Population in Thousands	Stopped Utilization by 2008, % (SE)	Population in Thousands	Started Utilization by 2008, % (SE)
Total	65912	58.21(0.89)	24.95(0.74)	44543	13.86(0.61)	21369	23.03(0.86)
Change in Household Wealth, 2006–2008, %							
Increase 50% or Greater	15594	52.26(1.18)	27.75(0.98)	9903	17.70(1.10)	5692	23.98(1.74)
50% > Increase > 10%	11471	67.97(1.76)	19.01(1.26)	8555	8.86(1.17)	2916	25.22(2.16)
Increase LE 10% or Decrease LE 10%	10945	65.28(1.72)	20.60(1.35)	7998	10.66(1.05)	2947	23.52(2.47)
10% < Decrease < 50%	16135	61.29(1.35)	23.89(1.25)	11124	11.10(1.17)	5011	23.09(1.92)
Decrease 50% or Greater	11767	45.79(1.43)	32.56(1.37)	6965	22.63(1.37)	4802	20.21(1.40)
Change in Household Income, 2006–2008, %							
Increase 50% or Greater	12092	58.99(1.59)	24.85(1.30)	8211	13.13(1.33)	3882	22.59(2.06)
50% > Increase > 10%	14948	60.47(1.52)	23.34(1.38)	10420	13.25(0.88)	4527	22.94(2.12)
Increase LE 10% or Decrease LE 10%	17791	54.76(1.27)	27.62(0.91)	11401	14.55(1.05)	6390	23.11(1.60)
10% < Decrease < 50%	14206	57.98(1.19)	25.01(1.11)	9595	14.15(1.11)	4611	22.94(2.25)
Decrease 50% or Greater	6875	61.34(2.71)	21.64(2.18)	4916	14.23(1.67)	1959	24.05(2.54)
Household Wealth Decile							
1 to 3	17432	32.46(1.21)	45.24(1.44)	7678	26.31(1.55)	9753	19.14(1.50)

Population Characteristics	Total 2006 and 2008 Population in Thousands	Dental Care Utilization During the 2006 and 2008 Survey Periods		Dental Care Utilization During the 2006 Survey Period Only		Dental Care Utilization During the 2008 Survey Period Only	
		Yes % (SE)	No,[b] % (SE)	Population in Thousands	Stopped Utilization by 2008, % (SE)	Population in Thousands	Started Utilization by 2008, % (SE)
4 to 6	20550	55.82(1.02)	25.73(0.92)	13675	16.12(0.98)	6875	23.08(1.38)
7 to 9	21004	74.51(1.15)	12.99(0.72)	17160	8.80(0.78)	3844	29.02(2.03)
10	6927	80.69(1.50)	7.87(0.99)	6030	7.30(1.09)	897	39.27(3.94)
Household Income [a]							
Poor	4130	26.94(2.33)	48.75(2.55)	1640	32.15(3.74)	2490	19.16(2.46)
Low Income	9971	37.05(1.57)	41.96(1.49)	4880	24.30(1.84)	5091	17.83(1.22)
Middle Income	18847	51.81(1.43)	29.56(1.20)	11711	16.62(1.26)	7136	21.92(1.54)
High Income	32964	72.19(0.85)	14.19(0.72)	26313	9.56(0.66)	6651	29.65(1.96)
Age in years							
51 to 64	35062	61.18(1.08)	21.78(0.89)	24661	13.02(0.87)	10401	26.57(1.63)
65 to 69	10704	57.85(1.37)	26.43(1.38)	7220	14.23(0.98)	3484	18.81(1.60)
70 to 74	8678	57.18(1.55)	26.50(1.37)	5759	13.83(1.18)	2919	21.23(1.58)
75 to 79	4572	50.79(2.04)	31.98(1.68)	2752	15.61(1.38)	1820	19.66(1.79)
80 and older	6897	49.91(1.68)	32.18(1.44)	4153	17.11(1.56)	2744	19.12(1.61)
Sex							
Male	35616	57.27(1.14)	24.95(1.01)	23883	14.59(0.89)	11733	24.25(1.40)
Female	30296	59.32(1.21)	24.96(0.93)	20660	13.02(0.79)	9636	21.54(0.94)
Race							
Black Non-Hispanic	5273	37.34(2.23)	38.45(1.92)	2686	26.70(2.58)	2587	21.63(1.99)

Population Characteristics	Total 2006 and 2008 Population in Thousands	Dental Care Utilization During the 2006 and 2008 Survey Periods		Dental Care Utilization During the 2006 Survey Period Only		Dental Care Utilization During the 2008 Survey Period Only	
		Yes % (SE)	No,[b] % (SE)	Population in Thousands	Stopped Utilization by 2008, % (SE)	Population in Thousands	Started Utilization by 2008, % (SE)
Hispanic	4134	37.93(2.69)	38.28(2.39)	2064	24.02(2.53)	2070	23.54(2.17)
White Non-Hispanic	54761	61.98(0.93)	22.63(0.75)	38679	12.26(0.61)	16082	22.93(1.91)
Other Non-Hispanic	1745	51.21(3.63)	25.45(2.81)	1115	19.82(3.52)	630	29.56(1.91)
Education							
Some or no school	9845	25.36(1.75)	53.09(1.88)	3740	33.25(2.51)	6105	14.38(1.02)
High school graduate	38490	56.08(0.76)	25.52(0.84)	25539	15.48(0.66)	12951	24.17(1.23)
College graduate	17577	81.28(1.04)	7.96(0.74)	15264	6.40(0.66)	2313	39.48(3.84)
Marital Status							
Married	45614	62.02(1.03)	22.22(0.86)	32351	12.56(0.79)	13263	23.59(1.22)
Widowed, Divorced	18066	48.45(1.15)	31.82(1.04)	10712	18.30(0.93)	7354	21.83(1.23)
Never Married	2232	59.50(2.96)	25.32(2.54)	1479	10.22(1.92)	753	24.92(4.41)
Household Size							
One	13594	53.54(1.06)	28.70(1.06)	8551	14.89(0.92)	5043	22.62(1.49)
Two	35056	62.04(1.12)	22.20(1.06)	24880	12.59(0.73)	10176	23.51(1.24)
Three or more	17262	54.12(1.66)	27.59(1.25)	11112	15.92(1.35)	6150	22.57(1.76)
Health Status							
Excellent/Very Good	30816	71.17(1.23)	15.25(0.86)	24180	9.29(0.69)	6636	29.20(1.80)
Good	19817	54.84(1.24)	27.28(1.21)	12785	15.00(0.97)	7032	23.11(1.58)
Fair/Poor	15279	36.45(1.20)	41.51(1.31)	7579	26.51(1.40)	7700	17.64(1.16)

Population Characteristics	Total 2006 and 2008 Population in Thousands	Dental Care Utilization During the 2006 and 2008 Survey Periods		Dental Care Utilization During the 2006 Survey Period Only		Dental Care Utilization During the 2008 Survey Period Only	
		Yes % (SE)	No,[b] % (SE)	Population in Thousands	Stopped Utilization by 2008, % (SE)	Population in Thousands	Started Utilization by 2008, % (SE)
Permanent Teeth							
All Missing	9776	9.19(0.87)	72.47(1.38)	2077	53.81(3.11)	7699	7.98(0.74)
Not Missing	56136	66.64(0.88)	16.68(0.66)	42467	11.91(0.55)	13669	31.51(1.29)
Retirement/Laboorce Transitions: 2006–2008							
Entered Full Retirement	5894	54.97(2.69)	27.26(2.25)	3889	16.70(1.90)	2005	19.85(3.47)
Entered Partial Retirement	3367	59.95(2.80)	22.19(2.45)	2437	17.19(2.63)	930	19.62(2.46)
Entered Labor Force	1556	52.02(5.10)	25.21(3.36)	978	17.20(4.56)	578	32.17(3.71)
Entered Not in the Labor Force, Not Retired	2021	41.21(3.44)	36.35(3.62)	1150	27.58(3.69)	871	15.67(1.83)
Always Fully Retired	25627	53.37(1.32)	29.12(1.18)	16282	16.00(0.81)	9345	20.14(1.10)
Always Partially Retired	4309	69.76(2.46)	17.34(1.83)	3279	8.31(1.46)	1030	27.48(3.74)
Always Not in the Labor Force, Not Retired	2826	47.61(2.89)	39.96(3.20)	1541	12.70(1.95)	1285	12.11(2.82)
Always In the Labor Force	20313	66.16(1.24)	17.86(0.88)	14988	10.33(0.92)	5325	31.88(2.26)
Dental Coverage Transitions: 2006–2008							
Always Covered	27360	75.74(1.03)	12.13(0.90)	22513	7.95(0.70)	4847	31.54(2.94)
Lost coverage	5327	40.55(2.22)	32.83(1.86)	3184	32.15(2.42)	2143	18.41(2.52)
Gained Coverage	4854	33.74(2.20)	40.46(2.22)	2135	23.30(2.70)	2719	27.77(2.51)
Never Covered	28371	48.81(1.10)	33.19(0.97)	16711	17.13(1.08)	11660	19.24(1.03)

NOTE: Percentages across the rows sum to greater than 100 percent because the base for the percentages in the last two panels is not the total population but rather subsets of the total for those with or without dental use in 2006. Population characteristics are based on 2006 HRS data except for the retirement/labor force, income, wealth, and dental coverage transition covariates. The combined sample size contains 14,247 persons in 9,428 households, with 9,223 persons with dental use in the 2 year period preceding the 2006 interview and 5,024 persons without dental use in the 2 year period preceding the 2006 interview. From the sample of 14,484 persons in 9,620 households in Table 1, 237 persons in 192 households were omitted with missing values for dental use or any independent variable

Population characteristics are measured either at the time of the 2006 interview, for the two-year period preceding the 2006 survey interview, or between the 2006 and 2008 interviews where indicated. Person-level weights from the 2008 HRS were used for the population estimates in the table.

[a] Low income refers to persons in families with incomes 101 percent to 200 percent of the poverty line; middle income, 201 percent to 400 percent of the poverty line; and high income, over 400 percent of the poverty line. Poor persons are at or below 100 percent of the poverty line including persons in families with negative income.

[b] Person had no dental utilization in both 2 year periods preceding the 2006 and 2008 interviews.

Table 3

Unadjusted and Adjusted Odds Ratios with 95% Confidence Intervals for Predictors of Stopping Dental Use and Starting Dental Use by Older Americans between the 2006 and 2008 HRS

	Likelihood of Stopping Dental Use		Likelihood of Starting Dental Use	
	Unadjusted Odds Ratio (Confidence Interval)	Adjusted Odds Ratio[b] (Confidence Interval)	Unadjusted Odds Ratio (Confidence Interval)	Adjusted Odds Ratio[b] (Confidence Interval)
Percentage Change in Household Wealth, 2006–2008				
Increase 50% or Greater	1.803 (1.342, 2.423) **	1.185 (0.829, 1.692)	1.025 (0.722, 1.456)	1.320 (0.905, 1.927)
50% > Increase > 10%	0.815 (0.581, 1.144)	0.688 (0.458, 1.035)	1.096 (0.798, 1.506)	1.272 (0.894, 1.810)
10% < Decrease < 50%	1.046 (0.746, 1.467)	0.948 (0.670, 1.342)	0.976 (0.683, 1.394)	0.985 (0.679, 1.428)
Decrease 50% or Greater	2.452 (1.910, 3.148) **	1.723 (1.304, 2.276) **	0.823 (0.584, 1.161)	1.000 (0.693, 1.445)
Increase LE 10% or Decrease LE 10% (ref.)	1.000	1.000	1.000	1.000
Percentage Change in Household Income, 2006–2008				
Increase 50% or Greater	0.887 (0.690, 1.141)	0.877 (0.670, 1.147)	0.971 (0.713, 1.323)	0.805 (0.572, 1.133)
50% > Increase > 10%	0.897 (0.751, 1.072)	1.061 (0.845, 1.332)	0.991 (0.710, 1.383)	0.908 (0.602, 1.370)
10% < Decrease < 50%	0.968 (0.761, 1.232)	1.039 (0.775, 1.392)	0.990 (0.710, 1.382)	0.943 (0.652, 1.363)
Decrease 50% or Greater	0.974 (0.726, 1.308)	1.088 (0.769, 1.540)	1.054 (0.737, 1.507)	0.943 (0.624, 1.426)
Increase LE 10% or Decrease LE 10% (ref.)	1.000	1.000	1.000	1.000
Household Wealth Decile				
1 to 3	4.534 (3.144, 6.539) **	2.157 (1.432, 3.249) **	0.366 (0.243, 0.551) **	0.398 (0.222, 0.716) **
4 to 6	2.440 (1.666, 3.575) **	1.787 (1.212, 2.635) **	0.464 (0.306, 0.704) **	0.520 (0.305, 0.888) **
7 to 9	1.224 (0.852, 1.759)	1.125 (0.791, 1.599)	0.632 (0.405, 0.987) *	0.717 (0.422, 1.218)

	Likelihood of Stopping Dental Use		Likelihood of Starting Dental Use	
	Unadjusted Odds Ratio (Confidence Interval)	Adjusted Odds Ratio[b] (Confidence Interval)	Unadjusted Odds Ratio (Confidence Interval)	Adjusted Odds Ratio[b] (Confidence Interval)
10 (ref.)	1.000	1.000	1.000	1.000
Household Income [a]				
Poor	4.483 (3.012, 6.671)**	1.984 (1.180, 3.338)*	0.562 (0.383, 0.824)**	1.097 (0.727, 1.655)
Low Income	3.036 (2.349, 3.922)**	1.306 (0.944, 1.808)	0.515 (0.406, 0.652)**	0.989 (0.724, 1.349)
Middle Income	1.885 (1.517, 2.342)**	1.146 (0.897, 1.464)	0.666 (0.522, 0.850)**	0.979 (0.744, 1.288)
High Income (ref.)	1.000	1.000	1.000	1.000
Age in years				
65 to 69	1.108 (0.922, 1.333)	0.898 (0.696, 1.158)	0.640 (0.493, 0.831)**	0.935 (0.664, 1.315)
70 to 74	1.073 (0.833, 1.381)	0.816 (0.594, 1.120)	0.745 (0.588, 0.944)*	1.235 (0.929, 1.642)
75 to 79	1.236 (0.966, 1.581)	0.899 (0.669, 1.207)	0.676 (0.508, 0.900)**	1.184 (0.825, 1.701)
80 and older	1.379 (1.048, 1.816)*	0.833 (0.587, 1.183)	0.653 (0.480, 0.890)**	1.198 (0.819, 1.751)
51 to 64 (ref.)	1.000	1.000	1.000	1.000
Sex				
Male	1.142 (0.942, 1.384)	1.536 (1.192, 1.979)**	1.166 (0.964, 1.412)	0.911 (0.710, 1.167)
Female (ref.)	1.000	1.000	1.000	1.000
Race/Ethnicity				
Black Non-Hispanic	2.608 (1.912, 3.557)**	1.416 (1.030, 1.947)*	0.927 (0.723, 1.190)	0.918 (0.713, 1.183)
Hispanic	2.263 (1.610, 3.183)**	0.924 (0.620, 1.677)	1.035 (0.779, 1.373)	1.176 (0.868, 1.593)

	Likelihood of Stopping Dental Use		Likelihood of Starting Dental Use	
	Unadjusted Odds Ratio (Confidence Interval)	Adjusted Odds Ratio[b] (Confidence Interval)	Unadjusted Odds Ratio (Confidence Interval)	Adjusted Odds Ratio[b] (Confidence Interval)
Other	1.769 (1.056, 2.964) *	1.733 (0.999, 3.007) *	1.411 (0.767, 2.595)	1.333 (0.706, 2.517)
White Non-Hispanic (ref.)	1.000	1.000	1.000	1.000
Education				
Some or No School	7.279 (5.330, 9.941) **	2.896 (1.935, 4.334) **	0.258 (0.180, 0.369) **	0.504 (0.346, 0.734) **
High School Graduate	2.677 (2.126, 3.371) **	1.809 (1.395, 2.345) **	0.489 (0.340, 0.702) **	0.746 (0.508, 1.097)
College Graduate (ref.)	1.000	1.000	1.000	1.000
Marital Status				
Widowed, Divorced	1.559 (1.295, 1.877) **	1.519 (1.060, 2.177) *	0.904 (0.733, 1.115)	1.030 (0.717, 1.480)
Never Married	0.792 (0.498, 1.260)	0.804 (0.494, 1.309)	1.075 (0.657, 1.757)	0.897 (0.499, 1.613)
Married (ref.)	1.000	1.000	1.000	1.000
Permanent Teeth				
All Missing	8.619 (6.725, 11.046) **	5.591 (4.180, 7.478) **	0.189 (0.148, 0.240) **	0.203 (0.153, 0.270) **
Not Missing All (ref.)	1.000	1.000	1.000	1.000
Household Size				
Two	0.823 (0.684, 0.990) *	1.305 (0.919, 1.855)	1.015 (0.858, 1.288)	1.015 (0.715, 1.441)
Three or more	1.082 (0.857, 1.367)	1.527 (1.098, 2.123) *	0.997 (0.754, 1.318)	0.904 (0.603, 1.357)
One (ref.)	1.000	1.000	1.000	1.000
Health Status				
Good	1.722 (1.385, 2.142) **	1.201 (0.930, 1.550)	0.729 (0.567, 0.937) *	0.953 (0.719, 1.263)

	Likelihood of Stopping Dental Use		Likelihood of Starting Dental Use	
	Unadjusted Odds Ratio (Confidence Interval)	Adjusted Odds Ratio[b] (Confidence Interval)	Unadjusted Odds Ratio (Confidence Interval)	Adjusted Odds Ratio[b] (Confidence Interval)
Fair/Poor	3.521 (2.859, 4.336) **	1.625 (1.270, 2.079) **	0.519 (0.408, 0.661) **	0.863 (0.650, 1.147)
Excellent/Very Good (ref.)	1.000	1.000	1.000	1.000
Retirement/Labor Force Transitions: 2006–2008				
Entered Full Retirement	1.741 (1.318, 2.300) **	1.238 (0.914, 1.676)	0.529 (0.339, 0.826) **	0.756 (0.434, 1.318)
Entered Partial Retirement	1.803 (1.202, 2.703) **	1.626 (0.988, 2.676)	0.522 (0.315, 0.863) *	0.630 (0.376, 1.057)
Entered Labor Force	1.804 (0.911, 3.574)	1.430 (0.678, 3.014)	1.013 (0.516, 1.991)	1.375 (0.647, 2.920)
Entered Not in the Labor Force, Not Retired	3.306 (2.103, 5.198) **	2.294 (1.435, 3.667) **	0.397 (0.208, 0.757) **	0.561 (0.280, 1.126)
Always Fully Retired	1.653 (1.326, 2.061) **	1.145 (0.835, 1.571)	0.539 (0.417, 0.695) **	0.730 (0.500, 1.066)
Always Partially Retired	0.787 (0.498, 1.243)	0.769 (0.469, 1.261)	0.810 (0.514, 1.275)	0.766 (0.441, 1.330)
Always Not in the Labor Force, Not Retired	1.263 (0.825, 1.934)	0.637 (0.409, 0.992) *	0.294 (0.155, 0.557) **	0.391 (0.192, 0.798) **
Always In the Labor Force (ref.)	1.000	1.000	1.000	1.000
Dental Coverage Transitions: 2006–2008				
Always Covered	0.418 (0.336, 0.519) **	0.471 (0.366, 0.607) **	1.933 (1.407, 2.657) **	1.633 (1.141, 2.337) **
Lost coverage	2.291 (1.719, 3.053) **	2.148 (1.556, 2.964) **	0.947 (0.680, 1.318)	0.949 (0.667, 1.349)
Gained Coverage	1.469 (1.037, 2.080) *	1.283 (0.907, 1.817)	1.613 (1.188, 2.192) **	1.577 (1.141, 2.180) **
Never Covered (ref.)	1.000	1.000	1.000	1.000

Note: Ref. indicates the reference groups for each categorical variable in the table. Characteristics for the independent variables appear in the rows of the table and serve as the controls for the adjusted odds ratios. These covariates are based on 2006 HRS data except for the retirement/labor force, income, wealth, and dental coverage transition covariates. The combined sample size for the regressions contains 14,247 persons in 9,428 households as in Table 2, with 9,223 persons with dental use in 2006 for the stopping use regression and 5,024 persons without dental use in 2006 for the starting use regression.

The Pseudo $R^2 = .077$ in the adjusted regression for stopping use, and $= .021$ in the adjusted regression for stopping use. Confidence intervals at the 95% level for the unadjusted and adjusted odds ratio estimates appear in parentheses. Estimates incorporate 2008 HRS person-level weights, and standard error estimates are adjusted for the complex HRS survey design.

[a] Where low income refers to persons in families with incomes 101 percent to 199 percent of the poverty line; middle income, 201 percent to 400 percent of the poverty line; and high income, over 400 percent of the poverty line. Poor persons are at or below 100 percent of the poverty line including persons in families with negative income.

[b] The adjusted odds ratio point estimate is the estimate of [probability of dental visit/probability of no dental visit] for persons with row characteristic divided by [probability of dental visit/probability of no dental visit] for reference group (ref.) after adjusting for other potentially confounding covariates. The unadjusted odds ratios are defined the same only do not control for other potentially confounding covariates.

*
P less than or equal to .05,

**
P less than or equal to .01.