American Journal of
Preventive Medicine

RESEARCH ARTICLE

Alcohol Consumption Patterns Before and After Retirement: A Longitudinal Cohort Study Within the Survey of Health, Ageing and Retirement in Europe (SHARE)

Giacomo Pietro Vigezzi, MD, PhD,[1] Paola Bertuccio, MSc, PhD,[1] Giansanto Mosconi, MD, PhD,[1] Riccardo Vecchio, MD,[1] Sonia Cerrai, MSc,[2] Tiziana Fanucchi, MSc,[3] Andrea Amerio, MD, PhD,[4,5] Sabrina Molinaro, MSc, PhD,[2] Silvano Gallus, MSc, PhD,[6] Anna Odone, MD, MSc, MPH, PhD[1,7]

Introduction: Retirement is a major life-course transition that can reshape health behaviors, including alcohol consumption. However, longitudinal evidence from large cross-national cohorts remains scarce.

Methods: In this longitudinal cohort study, Survey of Health, Ageing and Retirement in Europe Waves 1−8 (2004−2020) were merged, linking individual-level data from 8,998 adults aged ≥50 years who were employed at baseline and retired during follow-up. Outcomes were near-daily drinking, consumption of ≥8 alcohol units in the previous 7 days, and binge drinking (≥4−6 units on one occasion at least monthly). Time relative to retirement was grouped into 9 periods (≥10 years before to ≥10 years after). RRs with 95% CIs were estimated using generalized estimating equations adjusted for sex, age, geography, education, marital status, occupation, BMI, and chronic conditions. Data were analyzed in 2023−2024.

Results: At baseline, 18.1% drank almost daily, 18.7% consumed ≥8 units weekly, and 12.3% engaged in binge drinking. Compared with the retirement year, the risk of almost-daily drinking was lower 5−9 years before retirement (RR=0.86, 95% CI=0.78, 0.95) but higher 3−4 years (RR=1.12, 95% CI=1.01, 1.23), 5−9 years (RR=1.18, 95% CI=1.07, 1.31), and ≥10 years (RR=1.28, 95% CI=1.11, 1.48) after retirement. The weekly quantity did not change significantly. The risk of binge drinking was reduced both 5−9 years before (RR=0.86, 95% CI=0.77, 0.95) and ≥10 years after (RR=0.78, 95% CI=0.66, 0.93) retirement.

Conclusions: Alcohol use trajectories evolve both before and after retirement: near-daily drinking increases across the transition, binge drinking declines thereafter, and weekly volume remains broadly stable. Targeted counseling around retirement could reinforce moderation.

From the [1]Department of Public Health, Experimental and Forensic Medicine, University of Pavia, Pavia, Italy; [2]Institute of Clinical Physiology, National Research Council of Italy, Pisa, Italy; [3]Unit of Health Promotion, Epidemiology, and Government of Territorial Demand, ASST Fatebenefratelli Sacco, Milan, Italy; [4]Section of Psychiatry, Department of Neuroscience, Rehabilitation, Ophthalmology, Genetics, Maternal and Child Health (DINOGMI), University of Genoa, Genoa, Italy; [5]IRCCS Ospedale Policlinico San Martino, Genoa, Italy; [6]Department of Medical Epidemiology, Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Milan, Italy; and [7]Medical Direction, Fondazione IRCCS Policlinico San Matteo, Pavia, Italy

Address correspondence to: Anna Odone, MD, MSc, MPH, PhD, Department of Public Health, Experimental and Forensic Medicine, University of Pavia, via Forlanini, 2, Pavia, 27100, Italy. E-mail: anna.odone@unipv.it.

0749-3797/$36.00
https://doi.org/10.1016/j.amepre.2026.108474

INTRODUCTION

Alcohol consumption is a major public health concern across the life course,[1] with excessive use increasing the risks of liver cirrhosis, cancer, cardiovascular disease, injuries, and other harms.[2] Although some studies report potential benefits of moderate drinking in adults,[3] binge drinking and high-volume consumption consistently predict adverse outcomes.[4]

In late adulthood,[5] patterns may shift during significant life transitions.[6] Retirement,[7] in particular, restructures daily routines, social participation, and role demands[8–12] and may modify alcohol use.[13,14] Prior evidence is mixed and context dependent[15]: country-specific studies[16,17] and analyses from the U.S.[18,19] and from Japan[20] report increases, decreases, or no change after retirement, reflecting differences in drinking cultures, work norms, and measurement choices. Psychosocial determinants,[21,22] including stress, job satisfaction, and preretirement drinking culture,[23] further complicate inference. Notably, most studies emphasize a single dimension of use and the immediate postretirement period, leaving long-term trajectories and the interplay between frequency, weekly quantity, and binge episodes insufficiently characterized.

To address these gaps, the study examines alcohol use before and after retirement in a large, cross-national cohort, modeling trajectories of drinking frequency, weekly quantity, and binge drinking over a decade surrounding labor-force exit. Heterogeneity is also explored by sex, education, and occupational class to inform prevention, clinical counseling, and polypharmacy risks.

METHODS

Study Population

Individual-level data from the Survey of Health, Ageing and Retirement in Europe (SHARE), a biennial multicountry panel survey of adults aged ≥50 years collected using a standardized approach of computer-assisted personal interviewing, was used (Waves 1–8, 2004–2020). Participants were linked across waves using the unique identifier (mergeid). Information from the sociodemographic, behavioral, and employment and pension modules, together with harmonized generated variables for education, occupation, and health, was combined as in previous SHARE-based analyses.[9–11] The analytic cohort included respondents who were employed at baseline, retired during follow-up, and contributed ≥2 observations spanning the transition (≥1 before retirement and ≥1 at or after retirement). Further details on the SHARE design and fieldwork have been published elsewhere.[24]

Measures

The exposure under investigation was temporal proximity to retirement, measured in years and calculated as the interview year minus the self-reported retirement year. Time before and after retirement was divided into 9 periods: ≥10 years before retirement, 9–5 years before retirement, 4–3 years before retirement, 2–1 year before retirement, the year of retirement (referred to as Time 0), 1–2 years after retirement, 3–4 years after retirement, 5–9 years after retirement, and ≥10 years after retirement. The year of retirement served as the reference category for comparative analysis. The outcomes considered form the core components of the Alcohol Use Disorders Identification Test - Consumption (AUDIT-C) scale.[25]

First, alcohol drinking frequency was evaluated using wave-specific items: Wave 1 (*During the last 6 months, how often have you drunk any alcoholic beverages, like beer, cider, wine, spirits or cocktails?*) and Waves 2, 4, and 5 (*During the last 3 months, how often have you drunk any alcoholic beverages, like beer, cider, wine, spirits or cocktails?*). Mutually exclusive response options were *Almost every day, Five or six days a week, Three or four days a week, Once or twice a week, Once or twice a month, Less than once a month, Not at all in the last months*. On the basis of these responses, 4 frequencies were identified: (1) at least once a week, (2) at least 3 days a week, (3) at least 5 days a week, and (4) almost every day. Alcohol drinking almost every day was adopted as a dichotomous primary outcome for near-daily drinking.

Secondly, alcohol drinking quantity was assessed in Waves 6, 7, and 8 (*During the last 7 days, overall, how many units of alcoholic beverages did you have?*). The response was quantified on a continuous scale (i.e., number of alcohol units in the last 7 days), and drinking 8 or more alcohol units in the last 7 days was adopted as the second primary outcome. Weekly alcohol volume was operationalized as consuming ≥8 alcohol units in the previous 7 days, a conservative threshold chosen a priori to indicate an intake exceeding approximately 1 unit per day on average and thereby surpassing commonly cited low-risk limits for older adults (about ≤1 unit per day).[3,26]

The probability of binge drinking was considered as a secondary outcome and was assessed using wave-specific items: Wave 2 (*In the last 3 months, on how many days have you had four or more drinks on one occasion?*); Waves 4 and 5 (*In the last 3 months, how often did you have six or more drinks on one occasion?*); and Waves 6, 7, and 8 (*In the last 3 months, how often did you have six*

or more units of alcoholic beverages on one occasion?).[27] Response options were *Daily or almost daily, Five or six days a week, Three or four days a week, Once or twice a week, Once or twice a month, Less than once a month*, and *Not at all in the last 3 months*. Individuals were categorized as binge drinkers if they reported having 4 or more units of alcoholic beverages on one occasion at least once a month.

Alcohol outcomes were not administered in every SHARE wave. Accordingly, analyses were conducted using outcome-specific longitudinal data sets, each restricted to waves in which the corresponding alcohol measure was available. Consequently, the set of waves contributing to each outcome differs, and model-specific sample sizes vary across outcomes. Consistent with previous SHARE-based analyses,[9–11] the following covariates were considered: sex (self-reported using fixed-response options recorded by SHARE), age at the first interview, BMI at each interview, geographic area,[28] marital status at the first interview, education,[29] occupation at the first interview,[30] and presence of at least 1 chronic disease at each interview.

Statistical Analysis

The trajectories of RRs and corresponding 95% CIs were estimated for drinking alcohol almost every day, for drinking 8 or more alcohol units in the last 7 days, and for binge drinking at different time intervals (in years) before and after retirement. All statistical tests were 2 sided, and statistical significance was defined as a $p<0.05$. Using the year of retirement as the reference category, generalized estimating equation (GEE) models for repeated measures (binomial distribution and log link function) were carried out for each binary outcome. GEE models used an independent working correlation structure with robust (sandwich) SEs to account for within-subject correlation. For each outcome, GEE models were fitted to the corresponding outcome-specific data set and used all available repeated observations per participant (i.e., participants contributed the number of assessments that they had in the waves in which the outcome was measured). Nonassessed waves were not treated as missing outcomes; rather, they were excluded from the analytic data set for that outcome. The GEE models incorporated a set of covariates, including sex, age (continuous), geographic area, marital status, educational level, and occupation as baseline covariates, as well as BMI categories and the presence of at least 1 chronic disease (yes versus no) as time-varying covariates. Furthermore, stratified analyses were conducted for drinking alcohol almost every day, for drinking 8 or more alcohol units in the last 7 days, and for binge drinking, considering the following variables: sex, age group, age at retirement (i.e., equal to or less than and higher than the country-specific median age of retirement), geographic area, educational level, marital status, and occupation type (nonmanual and manual workers). Missing data were handled using a complete-case approach at the person-wave (observation) level. Specifically, for each outcome-specific GEE model, observations with missing values in the outcome, retirement timing, or any covariate included in that model were excluded; no imputation was performed. To evaluate heterogeneity across strata, in addition to inspecting the overlap of strata estimates CI, the quasi-likelihood information criterion (QIC) of GEE models were compared with and without interaction terms for each outcome and strata variable. The best-fitting model was thus determined on the basis of the lowest QIC value.[31] As a sensitivity analysis, models were re-estimated using a month-based event-time metric derived from the month of retirement and interview date (reference: interviews within ±6 months of retirement) and modeled weekly alcohol units as a continuous outcome.

All statistical analyses were performed using SAS software (Version 9.4) and R Studio (Version 4.1.1) for figures. This study was based on a secondary analysis of anonymized data; ethics approval and informed consent were waived.

RESULTS

The study cohort selection, including detailed inclusion and exclusion criteria, is reported in Figure A.1 (available online). From a total of 139,620 participants included in at least 1 SHARE wave, a cohort was selected of all 8,998 participants (53.3% men and 46.7% women) aged ≥50 years who declared being employed at baseline (i.e., those already retired at the first interview were excluded) and retired during follow-up, which was a maximum of 16 years and a median of 9 years. The median age at retirement was 63 years (IQR=60−65; range=50−85). The distribution of the study cohort according to the main baseline characteristics and the mean number of completed interviews per participant are reported in Table 1. At baseline, 18.1% of the study participants drank alcohol almost every day, 18.7% consumed 8 or more alcoholic units in the previous week, and 12.3% reported binge drinking. Baseline sex and geographic area distributions were broadly comparable between the eligible sample and the analytic cohort, with only modest differences (Table A.1, available online). Person-wave counts and observed proportions by event-time category for each outcome are reported in Table A.2 (available online). Participants contributed a varying number of repeated observations across the

Table 1. Distribution of the Overall Study Population Aged ≥50 Years (N=8,998) According to Geographic Area and Selected Baseline Characteristics, 2004–2020, Including the Mean Number of Completed Interviews per Participant

Baseline characteristics	*n*	%	Average number of interviews (SD)
European area[a]			
North	1,626	18.1	5.1 (1.6)
West	3,738	41.5	4.7 (1.5)
South	1,480	16.5	4.4 (1.5)
East	1,880	20.9	4.0 (1.3)
Israel	274	3.0	4.5 (1.3)
Sex			
Male	4,797	53.3	4.5 (1.5)
Female	4,201	46.7	4.6 (1.5)
Age group, years			
50–54	2,504	27.8	5.1 (1.4)
55–59	3,831	42.6	4.5 (1.5)
≥60 (maximum: 83)	2,663	29.6	4.0 (1.5)
Education level (ISCED)[b]			
Low (0–1)	1,044	11.6	4.6 (1.6)
Intermediate (2–4)	5,102	56.7	4.5 (1.5)
High (5–6)	2,787	31.0	4.6 (1.5)
Missing	65	0.7	
Marital status			
Married/registered partnership	7,127	79.2	4.5 (1.5)
Divorced/widowed	1,229	13.7	4.7 (1.5)
Never married	532	5.9	4.6 (1.5)
Missing	110	1.2	
Occupation (ISCO categories)[c]			
Managers	944	10.5	4.8 (1.5)
Professionals	1,397	15.5	4.6 (1.5)
Technicians and associate professionals	1,230	13.7	4.8 (1.5)
Clerical support workers	1,209	13.4	4.7 (1.4)
Services and sales workers	1,223	13.6	4.5 (1.4)
Skilled agricultural, forestry, and fishery workers	341	3.8	4.6 (1.4)
Craft and related trades workers	872	9.7	4.5 (1.4)
Plant and machine operators and assemblers	483	5.4	4.5 (1.5)
Elementary occupations	715	7.9	4.5 (1.5)
Armed forces	88	1.0	4.8 (1.5)
Missing	496	5.5	
Age at retirement[d]			
Less or equal than country-specific median	3,738	41.5	4.5 (1.5)
Greater than country-specific median	5,260	58.5	4.6 (1.5)
Alcohol consumption			
Almost every day			
No	6,829	75.9	4.7 (1.4)
Yes	1,632	18.1	4.7 (1.5)
Missing	537	6.0	
Drinking ≥8 alcoholic units			
No	3,446	38.3	4.9 (1.3)
Yes	1,679	18.7	5.0 (1.4)
Missing	3,873	43.4	

(*continued on next page*)

Table 1. Distribution of the Overall Study Population Aged ≥50 Years (N=8,998) According to Geographic Area and Selected Baseline Characteristics, 2004–2020, Including the Mean Number of Completed Interviews per Participant (*continued*)

Baseline characteristics	*n*	%	Average number of interviews (SD)
Binge drinking			
No	5,962	66.3	4.7 (1.5)
Yes	1,107	12.3	4.6 (1.6)
Missing	1,929	21.4	

[a]European countries were categorized into distinct geographic areas on the basis of the World Bank classification[26]: North (Denmark, Finland, and Sweden), West (Austria, Belgium, France, Germany, Luxembourg, The Netherlands, and Switzerland), South (Cyprus, Greece, Italy, Malta, Portugal, and Spain), East (Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia), and Israel.
[b]Education was classified into 3 levels according to the ISCED[27]: low (ISCED Levels 1–3), intermediate (ISCED Levels 5–6), and high (ISCED Levels 7–8).
[c]The occupational category was defined using the 10 primary groupings from the ISCO[28]: (1) managers; (2) professionals; (3) technicians and associate professionals; (4) clerical support workers; (5) services and sales workers; (6) skilled agricultural, forestry, and fishery workers; (7) craft and related trades workers; (8) plant and machine operators and assemblers; (9) elementary occupations; and (10) armed forces.
[d]Median (IQR) age at retirement in the analytic cohort was 63 (60–65) years (range 50–85).
ISCED, International Standard Classification of Education; ISCO, International Standard Classification of Occupations.

study period; the distribution of completed interviews per participant is shown in Table A.3 (available online).

Figure 1 reports the RR for drinking alcohol almost daily, according to the 9 selected time periods before and after retirement. Compared with the year of retirement, the risk of drinking almost every day was 14% lower 5–9 years before retirement (RR=0.86; 95% CI=0.78, 0.95). Conversely, the risk started to rise after retirement, by 12% after 3–4 years (RR=1.12; 95% CI=1.01, 1.23), by 18% after 5–9 years (RR=1.18; 95% CI=1.07, 1.31), and by 28% after 10 or more years (RR=1.28; 95% CI=1.11, 1.48).

Stratified analyses showed broadly consistent postretirement increases; subgroup-specific RRs are expressed relative to the retirement year within each subgroup (Figures A2–8, available online). Considering 10 or more years after retirement, the RRs were 1.27 (95% CI=1.08, 1.48) among men, 1.37 (95% CI=1.01, 1.85)

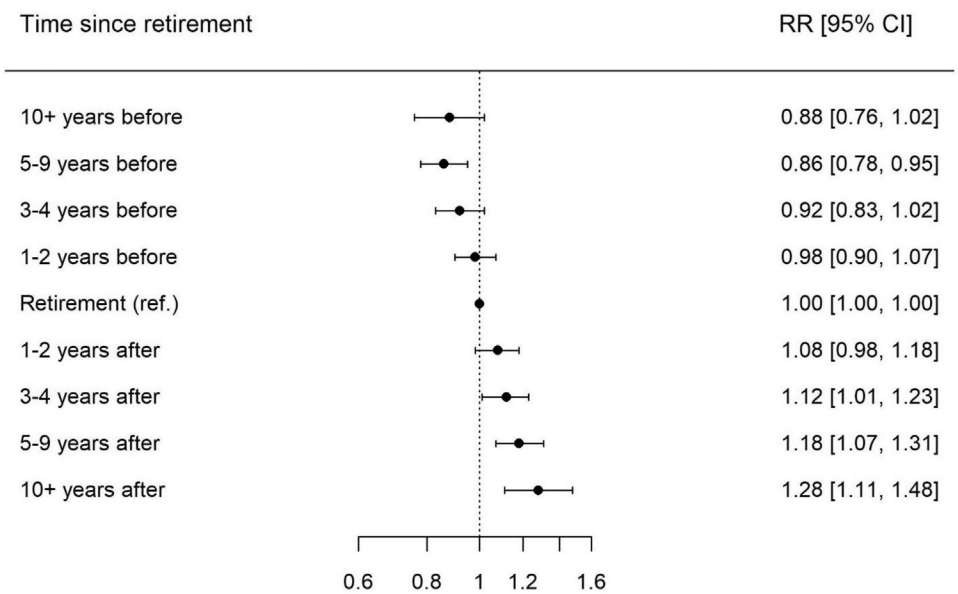

Figure 1. Forest plot of the RR and corresponding 95% CIs for drinking alcohol almost every day at different times before and after retirement (reference category: the year of retirement).
Note: Analytic sample: 8,998 participants contributing 25,610 person-wave observations. Estimates were obtained from a generalized estimating equation model for repeated measures, adjusted by sex, age (continuous), geographic area (North, West, South, East), marital status (married/registered partnership, divorced/widowed, and never married), educational level (low, intermediate, and high), occupation (ISCO major categories) as baseline covariates, and BMI categories (18.5–24.9, 25–29.9, ≥30) and the presence of at least 1 chronic disease (yes versus no) as time-varying covariates.
ISCO, International Standard Classification of Occupations.

among women, 1.41 (95% CI=1.12, 1.79) among individuals aged ≥60 years at baseline, 1.55 (95% CI=1.07, 2.25) among Northern European countries, 1.25 (95% CI=1.04, 1.50) among Western European countries, 1.26 (95% CI=1.08, 1.47) among married individuals, 1.75 (95% CI=1.13, 2.72) among divorced or widowed participants, 1.75 (95% CI=1.26, 2.43) among individuals with low education, 1.26 (95% CI=1.02, 1.55) among individuals with high education, 1.33 (95% CI=1.00, 1.78) among manual workers, 1.25 (95% CI=1.06, 1.48) among nonmanual workers, and 1.36 (95% CI=1.10, 1.68) among individuals with a retirement age above the country-specific median.

Figure 2 shows the RRs for drinking 8 or more alcohol units in the last 7 days according to the 9 selected time periods before and after retirement. No significant changes were observed relative to the retirement year, including in stratified analyses (Figures A.9−15, available online). Findings for the dichotomous weekly volume outcome were corroborated by sensitivity analyses modeling weekly units on a continuous scale, which showed broadly stable mean weekly consumption across event-time categories (Figure A.16, available online).

Figure 3 reports RRs and corresponding 95% CIs for binge drinking, according to the 9 time periods before and after retirement. In comparison with the year of retirement, the risk of binge drinking was 14% lower 5−9 years before retirement (RR=0.86; 95% CI=0.77, 0.95), 13% lower 3−4 years after retirement (RR=0.87; 95% CI=0.78, 0.96), and 22% lower 10 or more years after retirement (RR=0.78; 95% CI=0.66, 0.93).

Stratified analyses were broadly consistent (Figures A.17−23, available online). Among men, the risk of binge drinking was lower relative to the retirement year both before retirement (RR=0.87; 95% CI=0.77, 0.97 five to nine years before retirement) and after retirement (from RR=0.85; 95% CI=0.75, 0.96 three to four years after retirement to RR=0.75; 95% CI=0.62, 0.92 ten or more years after retirement). When stratifying by age group, no clear patterns emerged. The risk reduction was observed among participants from Eastern Europe (RR=0.78; 95% CI=0.63, 0.96 ten or more years after retirement). Married individuals exhibited a lower risk relative to the retirement year both before (RR=0.80; 95% CI=0.66, 0.96 ten or more years before) and after retirement (RR=0.79; 95% CI=0.65, 0.95 ten or more years after), whereas those who were never married showed a lower risk only after retirement (RR=0.56; 95% CI=0.38, 0.83 five to nine years after). Regarding educational attainment, individuals with intermediate education showed a lower risk of binge drinking relative to the

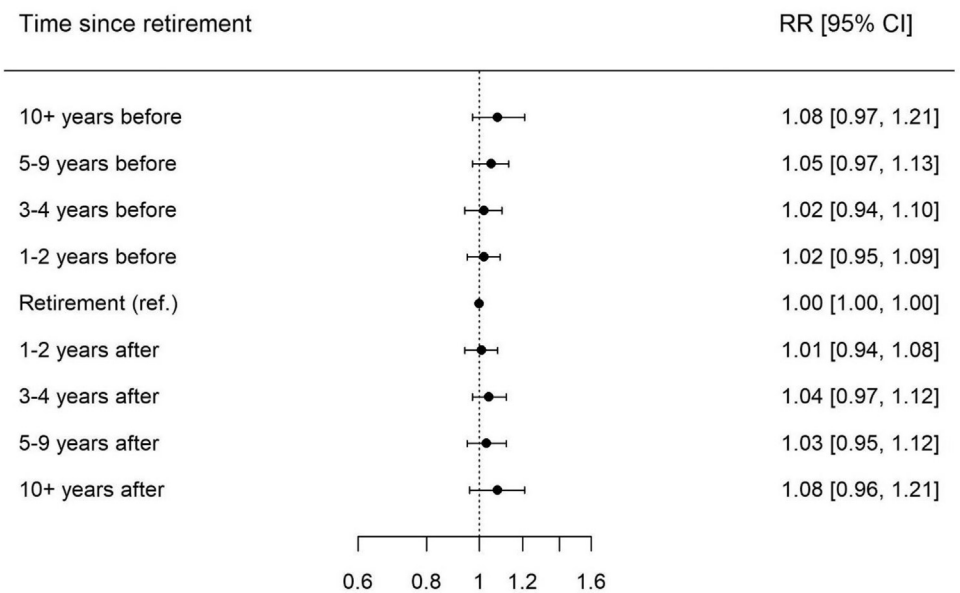

Figure 2. Forest plot of the RR and corresponding 95% CIs for drinking 8 or more alcohol units in the last 7 days at different times before and after retirement (reference category: the year of retirement).

Note: Analytic sample: 8,998 participants contributing 22,771 person-wave observations. Estimates were obtained from a generalized estimating equation model for repeated measures, adjusted by sex, age (continuous), geographic area (North, West, South, East), marital status (married/registered partnership, divorced/widowed, and never married), educational level (low, intermediate, and high), occupation (ISCO major categories) as baseline covariates, and BMI categories (18.5−24.9, 25−29.9, ≥30) and the presence of at least 1 chronic disease (yes versus no) as time-varying covariates.

ISCO, International Standard Classification of Occupations.

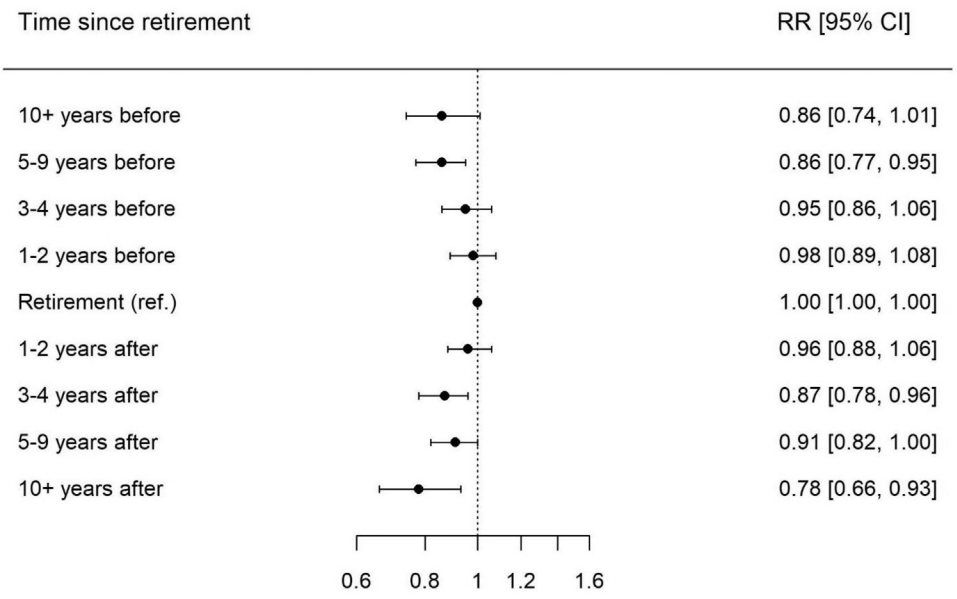

Figure 3. Forest plot of the RR and corresponding 95% CIs for binge drinking at different times before and after retirement (reference category: the year of retirement).

Note: Analytic sample: 8,998 participants contributing 33,979 person-wave observations. Estimates were obtained from a generalized estimating equation model for repeated measures, adjusted by sex, age (continuous), geographic area (North, West, South, East), marital status (married/registered partnership, divorced/widowed, and never married), educational level (low, intermediate, and high), occupation (ISCO major categories) as baseline covariates, and BMI categories (18.5−24.9, 25−29.9, ≥30) and the presence of at least 1 chronic disease (yes versus no) as time-varying covariates.

ISCO, International Standard Classification of Occupations.

retirement year both before (RR=0.78; 95% CI=0.63−0.96 ten or more years before) and after (RR=0.70; 95% CI=0.55, 0.90 ten or more years after) retirement. This trend was also observed for manual workers, who had a lower probability of binge drinking relative to the retirement year 3−4 years (RR=0.81; 95% CI=0.67, 0.99) and 5−9 years (RR=0.78; 95% CI=0.64, 0.95) after retirement. Concerning age at retirement, individuals with a retirement age below or equal to the country-specific median showed a lower probability of binge drinking relative to the retirement year both before (RR=0.59; 95% CI=0.38, 0.89 ten or more years before) and after (RR=0.65; 95% CI=0.51, 0.84 ten or more years after) retirement.

The QIC values of GEE models with and without interaction terms for each study outcome and strata variable are provided in Table A.4 (available online). Findings were robust in sensitivity analyses using month-based retirement timing (±6 months as the reference) (Table A.5, available online, and Figures A.24−26, available online).

DISCUSSION

This study provides cross-national, longitudinal evidence that alcohol-use trajectories evolve on both sides of the retirement transition. Relative to the retirement year, near-daily drinking changed during the preretirement period and increased further in the years after retirement, indicating a progressive shift toward more regular drinking across the transition. Weekly alcohol volume showed no clear evidence of change, both when operationalized using a conservative threshold and in sensitivity analyses using a continuous specification. Binge drinking followed a different pattern, with higher levels approaching retirement and lower risks in the longer term after retirement, consistent with a decline toward preretirement levels. These results were consistent across multiple demographic and socioeconomic strata and across Northern and Western Europe, suggesting that retirees increasingly weave alcohol into regular routines without escalating total weekly volume or engaging in episodic heavy drinking. Taken together, these findings align with a postretirement regular-moderation profile that refines prior, more ambiguous evidence.[20,22,32−35]

Mechanistically, the postretirement increase in almost-daily drinking accords with reports emphasizing expanded discretionary time, altered social rhythms, and reduced role constraints, whereas the concomitant decline in binge drinking suggests an attenuation of work-related stressors and social

contexts (e.g., after-work gatherings) that predispose individuals to heavy episodic use.[22,34,36] The dissociation between higher frequency and unchanged weekly quantity is compatible with a more even distribution of low-dose occasions across the week, often with meals, rather than concentrated social drinking.[33,37] Health-motivated self-regulation in older adults facing multimorbidity and medical advice, together with financial or functional constraints, likely contributes to a stable weekly volume.[23,32] Contexts with strong workplace-drinking norms may respond differently; in Japan, for example, retirement has been linked to reduced consumption, underscoring cultural moderation.[20,35] In older adults, age-specific evidence suggests that the TMREL (theoretical minimum risk exposure level) may be above zero and near 1 standard drink per day owing to cardiometabolic protection[3]; thus, higher frequency without greater weekly volume may reflect a more regular and potentially safer pattern when bingeing declines.[4]

Beyond average effects, heterogeneity warrants attention. Patterns were broadly consistent across sex, education, and occupational class, tempering concerns that the results are driven by a narrow subgroup. Descriptive contrasts suggest that countries with stronger meal-time drinking cultures may disproportionately exhibit the frequency increase without any uptick in weekly units, whereas settings where alcohol is more concentrated in social occasions may experience a larger decline in binge episodes.[16,17] Within Europe, evidence that retirement is associated with lifestyle changes, including reduced abstinence and more frequent intake in SHARE-based analyses, supports cross-national interpretation.[15] Policy environments, such as pension adequacy, copayments, and alcohol pricing, may also curb escalation in weekly volume despite more frequent occasions.

From a prevention standpoint, this pattern is double edged. More frequent drinking, even at low per-occasion doses, may increase cumulative exposure and interact adversely with polypharmacy, sleep, or cardiometabolic risk in susceptible subgroups.[3,38] Conversely, fewer binge episodes plausibly reduce acute harms (e.g., injuries, arrhythmias) and social consequences, and a stable weekly quantity mitigates concerns about escalation. Preventive counseling around retirement should therefore prioritize medication–alcohol interactions (e.g., anticoagulants, sedatives), day-to-day pacing, and guardrails against creeping increases in volume, leveraging the transition as a teachable moment in primary care or pension-related touchpoints.[33,34] A pragmatic, nonstigmatizing approach could include brief alcohol check-ins embedded within pension communications or routine medication reviews.

Limitations

This analysis has notable strengths: a large, multinational cohort with standardized data collection[24]; explicit separation of frequency, weekly quantity, and binge drinking; and modeling of trajectories across 9 periods spanning a decade before and after retirement. Limitations include reliance on self-report, wave-specific outcome availability, and cross-wave measurement nonequivalence (different recall windows for drinking frequency; the binge threshold changed). Survivorship and selection in later life and residual confounding by unmeasured factors (e.g., job strain, workplace norms, retirement circumstances) may affect estimates. Attrition over time reflects both panel loss and features of the SHARE design, including differences in study entry timing and wave-specific availability of alcohol measures. Although the GEE models used all available repeated observations, complete-case analyses without imputation rely on assumptions about missingness and loss to follow-up conditional on the observed covariates; if these assumptions were violated, selection bias may have occurred, with reduced precision and limited generalizability. The ≥8-units per week cut off is a pragmatic, conservative marker rather than a universal clinical threshold. Survey measures can underestimate aggregate consumption relative to sales and may vary culturally[39–41]; although event-time contrasts may mitigate stable reporting bias, differential reporting around retirement cannot be excluded. Changes may reflect age-related trajectories and anticipatory processes rather than retirement effects per se. Stratification with information-criterion comparisons helped limit overfitting[31]; however, cross-country policy heterogeneity may remain.

CONCLUSIONS

Retirement was followed by more frequent drinking and fewer heavy episodic drinking occasions, whereas changes in weekly volume were not clearly supported by the dichotomous indicator and appeared broadly stable in sensitivity analyses using a continuous specification in this large, cross-national cohort. Future work should triangulate self-report with biomarkers and dispensing data; exploit natural experiments such as pension-age reforms and price policies; and test brief, scalable interventions that preserve the observed decline in bingeing while preventing an insidious growth in total consumption.[3,20,33] Public health efforts should frame retirement as a critical window to reinforce moderation, address medication–alcohol risks, and prevent gradual increases in total intake, recognizing the potential benefit of reduced heavy episodic use. Translationally, aligning retirement-timed counseling with medication reviews

and guidance on alcohol-free days could yield pragmatic benefits at minimal cost.

ACKNOWLEDGMENTS

This paper uses data from Survey of Health, Ageing and Retirement in Europe (SHARE) Waves 1, 2, 3, 4, 5, 6, 7, and 8 (DOIs: 10.6103/SHARE.w1.900, 10.6103/SHARE.w2.900, 10.6103/SHARE.w3.900, 10.6103/SHARE.w4.900, 10.6103/SHARE.w5.900, 10.6103/SHARE.w6.900, 10.6103/SHARE.w6.DBS.100, 10.6103/SHARE.w7.900, 10.6103/SHARE.w8.900, and 10.6103/SHARE.w8ca.900) (Börsch-Supan et al.[24] provides more details on methodologic details). The SHARE data collection has been funded by the European Commission, DG RTD through FP5 (QLK6-CT-2001-00360), FP6 (SHARE-I3: RII-CT-2006-062193, COMPARE: CIT5-CT-2005-028857, SHARELIFE: CIT4-CT-2006-028812), FP7 (SHARE-PREP: GA N°211909, SHARE-LEAP: GA N°227822, SHARE M4: GA N°261982, DASISH: GA N°283646), and Horizon 2020 (SHARE-DEV3: GA N°676536, SHARE-COHESION: GA N°870628, SERISS: GA N°654221, SSHOC: GA N°823782, SHARE-COVID19: GA N°101015924) and by DG Employment, Social Affairs & Inclusion through VS 2015/0195, VS 2016/0135, VS 2018/0285, VS 2019/0332, VS 2020/0313, SHARE-EUCOV: GA N°101052589, and EUCOVII: GA N°101102412. Additional funding from the German Federal Ministry of Education and Research (01UW1301, 01UW1801, and 01UW2202), the Max Planck Society for the Advancement of Science, and the U.S. National Institute on Aging (U01_AG09740-13S2, P01_AG005842, P01_AG08291, P30_AG12815, R21_AG025169, Y1-AG-4553-01, IAG_BSR06-11, OGHA_04-064, BSR12-04, R01_AG052527-02, R01_AG056329-02, R01_AG063944, HHSN271201300071C, and RAG052527A) and from various national funding sources is gratefully acknowledged (details are provided in www.share-eric.eu). This study was based on a secondary analysis of anonymized data; therefore, ethics approval and informed consent were waived. The data sets supporting the conclusions of this study are publicly available from the SHARE Research Data Center (https://releases.sharedataportal.eu/) through application by bona fide researchers; the authors are not permitted to redistribute the source SHARE data. The data dictionary and statistical code used for the analyses will be made available upon reasonable request to the corresponding author.

Disclaimer: The funder had no role in study design, data collection, data analysis, data interpretation, or writing of the report.

Funding: This work was supported by the Ministry of University and Research (PROBEN call 2024).

Declaration of interest: None.

CREDIT AUTHOR STATEMENT

Giacomo Pietro Vigezzi: Conceptualization, Methodology, Validation, Investigation, Data curation, Writing - original draft. Paola Bertuccio: Conceptualization, Methodology, Software, Formal analysis, Data curation, Writing - review & editing, Visualization. Giansanto Mosconi: Methodology, Validation. Riccardo Vecchio: Writing - review & editing. Sonia Cerrai: Writing - review & editing. Tiziana Fanucchi: Writing - review & editing. Andrea Amerio: Writing - review & editing. Sabrina Molinaro: Writing - review & editing. Silvano Gallus: Writing - review & editing. Anna Odone: Conceptualization, Methodology, Validation, Resources, Supervision, Project administration, Funding acquisition.

SUPPLEMENTAL MATERIAL

Supplemental materials associated with this article can be found in the online version at https://doi.org/10.1016/j.amepre.2026.108474.

REFERENCES

1. Rehm J, Mathers C, Popova S, Thavorncharoensap M, Teerawattananon Y, Patra J. Global burden of disease and injury and economic cost attributable to alcohol use and alcohol-use disorders. *Lancet.* 2009;373(9682):2223–2233. https://doi.org/10.1016/S0140-6736(09)60746-7.
2. Bagnardi V, Rota M, Botteri E, et al. Alcohol consumption and site-specific cancer risk: a comprehensive dose-response meta-analysis. *Br J Cancer.* 2015;112(3):580–593. https://doi.org/10.1038/bjc.2014.579.
3. Bryazka D, Reitsma MB, Griswold MG, et al. Population-level risks of alcohol consumption by amount, geography, age, sex, and year: a systematic analysis for the Global Burden of Disease Study 2020. *Lancet.* 2022;400(10347):185–235. https://doi.org/10.1016/S0140-6736(22)00847-9.
4. Holahan CJ, Holahan CK, Moos RH. Binge drinking and alcohol problems among moderate average-level drinkers. *Am J Prev Med.* 2022;63(3):324–330. https://doi.org/10.1016/j.amepre.2022.03.021.
5. Moos RH, Brennan PL, Schutte KK, Moos BS. Older adults' health and late-life drinking patterns: a 20-year perspective. *Aging Ment Health.* 2010;14(1):33–43. https://doi.org/10.1080/13607860902918264.
6. Perreira KM, Sloan FA. Life events and alcohol consumption among mature adults: a longitudinal analysis. *J Stud Alcohol.* 2001;62(4):501–508. https://doi.org/10.15288/jsa.2001.62.501.
7. Vigezzi GP, Barbati C, Maggioni E, et al. Impact of retirement transition on health, well-being and health behaviours: critical insights from an overview of reviews. *Soc Sci Med.* 2025;375:118049. https://doi.org/10.1016/j.socscimed.2025.118049.
8. Vigezzi GP, Gaetti G, Gianfredi V, et al. Transition to retirement impact on health and lifestyle habits: analysis from a nationwide Italian cohort. *BMC Public Health.* 2021;21(1):1670. https://doi.org/10.1186/s12889-021-11670-3.
9. Bertuccio P, Vigezzi GP, Mosconi G, Gallus S, Odone A. Transition to retirement impact on smoking habit: results from a longitudinal analysis within the Survey of Health, Ageing and Retirement in Europe (SHARE) project. *Aging Clin Exp Res.* 2023;35(5):1117–1126. https://doi.org/10.1007/s40520-023-02397-9.
10. Mosconi G, Vigezzi GP, Bertuccio P, Amerio A, Odone A. Transition to retirement impact on risk of depression and suicidality: results from a longitudinal analysis of the Survey of Health, Ageing and Retirement in Europe (SHARE). *Epidemiol Psychiatr Sci.* 2023;32:e34. https://doi.org/10.1017/s2045796023000239.
11. Vigezzi GP, Bertuccio P, Bonaccio M, et al. Transition to retirement impact on food consumption frequency: results from a longitudinal analysis within the Survey of Health, Ageing and Retirement in Europe (SHARE). *J Nutr Health Aging.* 2025;29(4):100503. https://doi.org/10.1016/j.jnha.2025.100503.
12. d'Errico A, Filippi M, Vigezzi GP, Odone A, Ardito C. Transition to retirement impact on caregiving, grandparenting, and volunteering: analysis from a nationwide Italian cohort. *J Aging Health.* 2025 In press. Online July 6. https://doi.org/10.1177/08982643251358027.

13. Kesavayuth D, Rosenman RE, Zikos V. Retirement and health behaviour. *Appl Econ.* 2018;50(54):5859–5876. https://doi.org/10.1080/00036846.2018.1488070.
14. Müller T, Shaikh M. Your retirement and my health behavior: evidence on retirement externalities from a fuzzy regression discontinuity design. *J Health Econ.* 2018;57:45–59. https://doi.org/10.1016/j.jhealeco.2017.10.005.
15. Celidoni M, Rebba V. Healthier lifestyles after retirement in Europe? Evidence from SHARE. *Eur J Health Econ.* 2017;18(7):805–830. https://doi.org/10.1007/s10198-016-0828-8.
16. Syse A, Veenstra M, Furunes T, Mykletun RJ, Solem PE. Changes in health and health behavior associated with retirement. *J Aging Health.* 2017;29(1):99–127. https://doi.org/10.1177/0898264315624906.
17. Gee GC, Liang J, Bennett J, et al. Trajectories of alcohol consumption among older Japanese followed from 1987−1999. *Res Aging.* 2007;29(4):323–347. https://doi.org/10.1177/0164027507300803.
18. Bobo JK, Greek AA. Increasing and decreasing alcohol use trajectories among older women in the U.S. across a 10-year interval. *Int J Environ Res Public Health.* 2011;8(8):3263–3276. https://doi.org/10.3390/ijerph8083263.
19. Bobo JK, Greek AA, Klepinger DH, Herting JR. Predicting 10-year alcohol use trajectories among men age 50 years and older. *Am J Geriatr Psychiatry.* 2013;21(2):204–213. https://doi.org/10.1016/j.jagp.2012.10.021.
20. Oshio T, Kan M. The dynamic impact of retirement on health: evidence from a nationwide ten-year panel survey in Japan. *Prev Med.* 2017;100:287–293. https://doi.org/10.1016/j.ypmed.2017.04.007.
21. Bacharach SB, Bamberger PA, Sonnenstuhl WJ, Vashdi D. Retirement, risky alcohol consumption and drinking problems among blue-collar workers. *J Stud Alcohol.* 2004;65(4):537–545. https://doi.org/10.15288/jsa.2004.65.537.
22. Henkens K, van Solinge H, Gallo WT. Effects of retirement voluntariness on changes in smoking, drinking and physical activity among Dutch older workers. *Eur J Public Health.* 2008;18(6):644–649. https://doi.org/10.1093/eurpub/ckn095.
23. Bacharach S, Bamberger P, Biron M, Horowitz-Rozen M. Perceived agency in retirement and retiree drinking behavior: job satisfaction as a moderator. *J Vocat Behav.* 2008;73(3):376–386. https://doi.org/10.1016/j.jvb.2008.07.007.
24. Börsch-Supan A, Brandt M, Hunkler C, et al. Data resource profile: the survey of health, ageing and retirement in Europe (SHARE). *Int J Epidemiol.* 2013;42(4):992–1001. https://doi.org/10.1093/ije/dyt088.
25. Bush K, Kivlahan DR, McDonell MB, Fihn SD, Bradley KA. The AUDIT alcohol consumption questions (AUDIT-C): an effective brief screening test for problem drinking. Ambulatory Care Quality Improvement Project (ACQUIP). Alcohol Use Disorders Identification Test. *Arch Intern Med.* 1998;158(16):1789–1795. https://doi.org/10.1001/archinte.158.16.1789.
26. Moos RH, Schutte KK, Brennan PL, Moos BS. Older adults' alcohol consumption and late-life drinking problems: a 20-year perspective. *Addiction.* 2009;104(8):1293–1302. https://doi.org/10.1111/j.1360-0443.2009.02604.x.
27. Indicator metadata registry details. World Health Organization. https://www.who.int/data/gho/indicator-metadata-registry/imr-details/459. Accessed January 29, 2026.
28. Countries and Economies. The World Bank. https://data.worldbank.org/country. Accessed January 29, 2026.
29. International Standard Classification of Education: ISCED 2011. Montreal: UNESCO Institute for Statistics; 2012. https://unesdoc.unesco.org/ark:/48223/pf0000219109_eng. Accessed January 29, 2026.
30. International Standard Classification of Occupations 2008 (ISCO-08): Structure, Group Definitions and Correspondence Tables. Geneva: International Labour Office; 2012. https://www.ilo.org/publications/international-standard-classification-occupations-2008-isco-08-structure. Accessed January 29, 2026.
31. Pan W. Akaike's information criterion in generalized estimating equations. *Biometrics.* 2001;57(1):120–125. https://doi.org/10.1111/j.0006-341x.2001.00120.x.
32. Brennan PL, Schutte KK, Moos RH. Retired status and older adults' 10-year drinking trajectories. *J Stud Alcohol Drugs.* 2010;71(2):165–168. https://doi.org/10.15288/jsad.2010.71.165.
33. Zins M, Guéguen A, Kivimaki M, et al. Effect of retirement on alcohol consumption: longitudinal evidence from the French Gazel cohort study. *PLoS One.* 2011;6(10):e26531. https://doi.org/10.1371/journal.pone.0026531.
34. Wang X, Steier JB, Gallo WT. The effect of retirement on alcohol consumption: results from the U.S. Health and Retirement Study. *Eur J Public Health.* 2014;24(3):485–489. https://doi.org/10.1093/eurpub/cku027.
35. Motegi H, Nishimura Y, Terada K. Does retirement change lifestyle habits? *Jpn Econ Rev.* 2016;67(2):169–191. https://doi.org/10.1111/jere.12104.
36. Platt A, Sloan FA, Costanzo P. Alcohol-consumption trajectories and associated characteristics among adults older than age 50. *J Stud Alcohol Drugs.* 2010;71(2):169–179. https://doi.org/10.15288/jsad.2010.71.169.
37. Xue B, Head J, McMunn A. The associations between retirement and cardiovascular disease risk factors in China: a 20-year prospective study. *Am J Epidemiol.* 2017;185(8):688–696. https://doi.org/10.1093/aje/kww166.
38. Han BH, Moore AA, Sherman SE, Palamar JJ. Prevalence and correlates of binge drinking among older adults with multimorbidity. *Drug Alcohol Depend.* 2018;187:48–54. https://doi.org/10.1016/j.drugalcdep.2018.01.038.
39. Kilian C, Manthey J, Probst C, et al. Why is per capita consumption underestimated in alcohol surveys? Results from 39 surveys in 23 European countries. *Alcohol.* 2020;55(5):554–563. https://doi.org/10.1093/alcalc/agaa048.
40. Stockwell T, Zhao J, Sherk A, Rehm J, Shield K, Naimi T. Underestimation of alcohol consumption in cohort studies and implications for alcohol's contribution to the global burden of disease. *Addiction.* 2018;113(12):2245–2249. https://doi.org/10.1111/add.14392.
41. Boniface S, Shelton N. How is alcohol consumption affected if we account for under-reporting? A hypothetical scenario. *Eur J Public Health.* 2013;23(6):1076–1081. https://doi.org/10.1093/eurpub/ckt016.