

Childhood Circumstances and Alcohol Consumption in Portuguese People Aged 50 and Over: An Analysis of the “Survey of Health, Ageing and Retirement in Europe” Project

Circunstâncias da Infância e Adolescência e Consumo de Álcool nos Portugueses com 50 ou Mais Anos: Análise no Âmbito do Projeto “Survey of Health, Ageing and Retirement in Europe”

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ABSTRACT

Introduction: The aim of this study was to estimate the association between childhood and adolescence circumstances and alcohol consumption in Portuguese adults aged 50 and over, particularly focusing on socioeconomic conditions, physical abuse, family and social integration during childhood and adolescence, and alcohol consumption in adulthood.

Methods: We conducted an observational, cross-sectional, and analytical epidemiological study using self-reported data collected face-to-face through computer-assisted interviews in waves 7 (2017) and 9 (2022) of the Survey of Health, Ageing, and Retirement in Europe in Portugal. Participants included all Portuguese individuals who responded to the “Childhood and Adolescence Circumstances” module (wave 7) and “Behavioural Risks” module (wave 9). Associations were assessed using chi-squared or Student’s *t*-tests. Odds ratios (OR) with 95% confidence intervals (95% CI) were estimated through binary and multinomial logistic regressions models.

Results: A total of 903 participants were included; 378 (41.9%) were male and 770 (85.3%) were over 65 years old. Higher-risk drinking was identified in 220 participants (50.0%). The optimized binary logistic regression model for the current drinkers revealed significant positive associations between higher-risk alcohol consumption and male sex (OR = 6.444; 95% CI 4.329 – 11.111; $p < 0.001$), and having been a victim of physical abuse in childhood and adolescence (OR 2.063; 95% CI 1.119 – 3.803; $p = 0.020$). Living in a house with better conditions (OR = 0.767; CI 0.608 – 0.968; $p = 0.025$) revealed a significant negative association with higher-risk alcohol consumption. The optimized multinomial logistic regression model considering the non and current drinkers supported that being male (low-risk OR = 2.312; 95% CI: 1.567 – 0.3409; $p < 0.001$ higher-risk OR = 15.682; 95% CI: 10.041 – 24.491; $p < 0.001$) and physical abuse in the childhood and adolescence (higher-risk OR = 2.049; 95% CI: 1.200 – 3.497; $p = 0.008$) were risk factors for higher-risk alcohol consumption.

Conclusion: Physical abuse in childhood was associated with higher-risk alcohol consumption, while living in better housing conditions during these periods showed a protective association. Being male was strongly associated with both low- and higher-risk drinking patterns. Further studies, especially longitudinal ones, are needed to clarify the role of early-life circumstances in alcohol consumption.

Keywords: Adult Survivors of Child Adverse Events; Adverse Childhood Experiences; Alcohol Drinking

RESUMO

Introdução: Este estudo teve como objetivo estimar a associação entre as circunstâncias da infância e adolescência e o consumo de álcool em adultos portugueses com 50 ou mais anos, particularmente considerando as condições socioeconómicas, o abuso físico, a integração familiar e social durante a infância e adolescência e o consumo de álcool na idade adulta.

Métodos: Realizou-se um estudo epidemiológico observacional, transversal e analítico, utilizando dados recolhidos presencialmente através de entrevistas assistidas por computador nas vagas 7 (2017) e 9 (2022) do *Survey of Health, Ageing, and Retirement in Europe* em Portugal. Foram incluídos todos os participantes portugueses que responderam ao módulo “Circunstâncias da infância” (vaga 7) e “Comportamentos de risco” (vaga 9). As associações foram avaliadas com os testes do qui-quadrado ou *t* de Student. As razões de *odds* (OR) com intervalos de confiança a 95% (IC 95%) foram estimadas por modelos de regressão logística binária e multinomial.

Resultados: Foram incluídos 903 participantes; 378 (41,9%) do sexo masculino e 770 (85,3%) com mais de 65 anos. O consumo de maior risco foi identificado em 220 (50,0%). No modelo de regressão logística binária otimizado foram encontradas associações positivas significativas entre o consumo de álcool de maior risco e o sexo masculino (OR = 6,444; IC 95% 4,329 - 11,111; $p < 0,001$) e ter sido vítima de abuso físico na infância e adolescência (OR = 2,063; IC 95% 1,119 - 3,803; $p = 0,020$). Melhores condições habitacionais durante a infância (OR = 0,767; IC 95% 0,608 - 0,968; $p = 0,025$) revelaram uma associação negativa significativa com o consumo de álcool de maior risco. O modelo de regressão logística multinomial otimizado indicou que ser do sexo masculino (OR baixo risco = 2,312; IC 95% 1,567 - 3,409; $p < 0,001$; OR de maior risco = 15,682; IC 95% 10,041 - 24,491; $p < 0,001$) e ter sofrido abuso físico na infância e adolescência (OR de maior risco = 2,049; IC 95% 1,200 - 3,497; $p = 0,008$) constituem fatores de risco para o consumo de álcool de maior risco.

Conclusão: O abuso físico está associado ao consumo de álcool de maior risco, enquanto viver em melhores condições habitacionais apresenta uma associação protetora. Ser do sexo masculino está fortemente associado a padrões de consumo de álcool de baixo risco e de maior risco. Estudos longitudinais são necessários para esclarecer o papel das circunstâncias precoces no consumo de álcool.

Palavras-chave: Adultos Sobreviventes de Eventos Adversos na Infância; Consumo de Álcool; Experiências Adversas da Infância

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KEY MESSAGES

- This is the first study in Portugal to examine the long-term influence of childhood and adolescence circumstances on alcohol consumption in older adults.
- By adopting a life-course perspective, the study addresses a current public health problem and generates relevant insights for targeted prevention and intervention strategies.
- The use of nationally representative SHARE data and robust analytical methods ensures high scientific validity and reliability.
- The cross-sectional design precludes causal inference.
- Self-reported data may be subject to recall and social desirability biases.

INTRODUCTION

Alcohol consumption imposes a substantial global burden on mortality and disability.¹

Despite its toxic, psychoactive, and addictive properties, alcohol remains widely consumed and deeply ingrained in the culture of many countries, often leading to an underestimation of its health and social consequences.

Alcohol has significant toxic effects on the central nervous, digestive and cardiovascular systems, and contributes to a wide range of health problems such as liver disease, oncological diseases, particularly cancer of the oral cavity, pharynx, larynx, esophagus, liver, colorectal and breast, and cardiovascular diseases.²⁻⁵ Due to its immunosuppressive effects, it also increases the risk of communicable diseases such as tuberculosis and human immunodeficiency virus (HIV).⁶ In addition, alcohol consumption is one of the main causes of road traffic accidents, injuries and trauma.^{1,7}

Harmful alcohol consumption, which is detrimental to both physical and mental health, imposes a substantial social and economic burden, accounting for 132.6 million disability-adjusted life years (DALYs) in 2016.⁶ In 2019, 2.6 million deaths were attributed to alcohol consumption, representing 4.7% of all deaths worldwide in that year.⁸

According to the World Health Organization (WHO), Portugal has one of the highest alcohol consumption rates *per capita* in the world: among the Portuguese who drink, 16.9% drink excessively and 2.1% are alcohol dependent.⁹ In 2014, 5% of the Portuguese population reported harmful alcohol consumption, while the European Union average was 3%.¹⁰ Among the Portuguese population, hazardous alcohol consumption was seven times higher among men (8.3%) than among women (1.2%), and three times higher among people with a lower level of education. It was found that 7.1% of people living in rural areas reported harmful alcohol consumption, which is more than double the rate found in urban areas (3.4%). Similarly, harmful alcohol consumption was almost twice as much in those with the lowest income (5%) compared with those with the highest income (3%).¹⁰

When seeking solutions to address this public health issue, it is essential to take multiple factors into account, in-

cluding early-life factors that underlie consumption patterns. The family environment, the socio-economic status of the family, the quality of education, access to health services, the cultural and social context and the presence of traumatic experiences are key aspects that shape the individuals and their health behavior (Fig. 1).¹¹

In this regard, childhood and adolescence represent crucial periods of life, as experiences during these years may shape behavioral patterns that persist in adulthood. Socioeconomic conditions, exposure to adverse childhood experiences, and the family environment can strongly influence health trajectories, including the risk of alcohol misuse later in life.¹⁶⁻²²

This study aimed to explore the relationship between childhood circumstances (socioeconomic status, adverse experiences, and family and social integration) and alcohol consumption in Portuguese people aged 50 and over, in order to support the development of targeted policies and interventions.

METHODS

SHARE project

This study is based on information collected as part of the Survey of Health, Ageing and Retirement in Europe (SHARE) project. It is a longitudinal, multinational survey providing data on the health, socioeconomic status, and social and family networks of more than 140 000 individuals aged 50 and over from 28 European countries (including Israel).²³

The first data collection process (first wave) started in 2004, and the last wave took place in 2022. Portugal first participated in SHARE in wave 4 (2010 - 2011) and subsequently in waves 6 (2015), 7 (2017-2018), Corona 1 (2020), Corona 2 (2021), and 9 (2022).

Participant selection

The sampling frame was the National Health Service User Register. The basic sample was established in the first wave in which Portugal participated (2010 - 2011) and was extended in wave 9 (2022) to maintain the representativeness

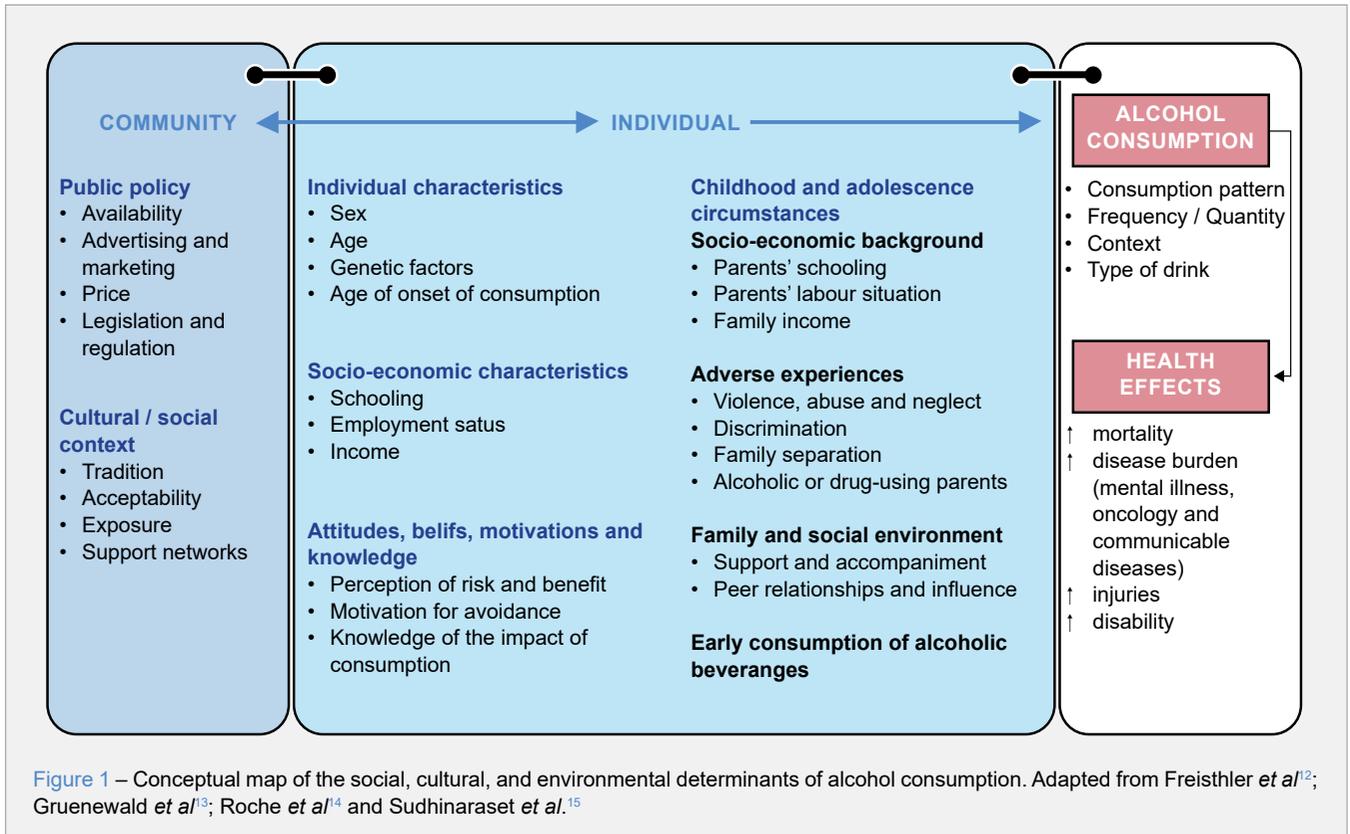


Figure 1 – Conceptual map of the social, cultural, and environmental determinants of alcohol consumption. Adapted from Freisthler *et al*.¹²; Gruenewald *et al*.¹³; Roche *et al*.¹⁴ and Sudhinaraset *et al*.¹⁵

of the 50 - 59 age group and to be able to analyze less frequent phenomena. In this latest wave, 1686 people participated, 577 of them for the first time.²⁴

Stratified sampling was used and consisted of five consecutive stages: (1) selection of four postcode digits; (2) selection of municipalities; (3) selection of seven postcode digits; (4) selection of addresses; and (5) verification of eligibility by age.

In stage one, Portugal was stratified into 22 sub-regions based on a combination of geographical criteria and the size of the population aged 50 and over. In each sub-region, a four-digit postal code was randomly selected.

In stage two, for each of these codes, a random sample of municipalities was selected with probability proportional to the number of seven-digit postcodes. In stage three, for each municipality, a sample of seven-digit postcodes was selected by simple random sampling.

In stage four, a sample of addresses was selected for each seven-digit postcode using systematic sampling with random selection of the first unit.

Stage five consisted of the random selection of eligible persons by age, which was carried out by interviewers in the field.

All SHARE respondents interviewed in any wave are part of the longitudinal sample. Age-eligible respondents

are traced and interviewed even if they move within the country.

This study included Portuguese individuals aged 50 and over in 2022 who participated in waves 7²⁵ and 9²⁶ of SHARE and completed the "Childhood and Adolescence Circumstances" module in wave seven and the "Risk Behaviours" module in wave 9. The final sample comprised 903 individuals (525 women and 378 men) with an average age of 73.07 years.

Data collection

Participants were assessed using a computer-assisted personal interview (CAPI). The interview was organized into several thematic modules covering aspects of physical health, mental health, employment and pensions, childhood and adolescent circumstances, risk behaviors, cognitive functioning, social networks, family, and children. The various dimensions assessed in the SHARE project questionnaires can be found in Appendix 1 (Appendix 1: <https://www.actamedicaportuguesa.com/revista/index.php/amp/article/view/24100/15875>).

Interviewers are trained before fieldwork. Their participation is voluntary and confidential. In wave nine there were 68 interviewers in Portugal, more than half of whom were aged between 19 and 39 years old.²⁶

Answers were allowed to be given by someone other than the participant (the respondent's proxy) in cases of physical or mental illness that prevented direct participation. However, questions about relationships with parents and friends were answered only by the participant.

In wave seven, in addition to the regular panel questionnaire, SHARE includes a section called "SHARELIFE", which looks at the life stories of the respondents. This section brings together detailed demographic, economic and sociological information, and allows us to improve our understanding of the influence of childhood and adolescent experiences and events.

Wave nine is the most recent and includes modules on various topics, one of which is of particular interest for this specific study, called "Risk Behaviours", from which information on alcohol consumption was obtained.

This study used data from the "Childhood and Adolescence Circumstances" module in wave seven and the "Sociodemographic" and "Risk Behaviours" modules in wave nine.

"Sociodemographic" module

The "Sociodemographic" module contains basic sociodemographic information, such as sex, year of birth, marital status, level of education, job situation, ability to meet monthly expenses, and area of residence.

The participants' age was calculated by considering their year of birth and the year in which the questionnaire was administered (2022). This was then divided into two categories: (1) 50 - 64 years old and (2) ≥ 65 years old.

The level of education is standardized across countries as the SHARE project uses the International Standard Classification of Education (ISCED). This variable was coded as: (0) none or still studying, (1) low level of education, (2) medium level of education and (3) high level of education. Low level of education corresponds to primary education; medium level of education corresponds to secondary and post-secondary non-tertiary education and high level of education corresponds to tertiary education.

Marital status was categorized as: (1) single, (2) married or in a civil partnership, (3) divorced and (4) widowed.

Job situation was categorized as: (1) retired, (2) employed, (3) unemployed, (4) permanently sick or disabled, (5) homemaker and (6) other.

The ability to meet monthly expenses, (1) with difficulty and (2) easily, was used to characterize household income.

Area of residence was coded as (1) urban area and (2) rural area. 'Urban area' refers to a large city, suburbs or outskirts of a large city or a large town. 'Rural area' refers to a small town, rural area or village.

"Risk Behaviours" module

The "Risk Behaviours" module contains information on

health behaviors such as smoking, alcohol consumption, and physical activity. For this study, only data on alcohol consumption was used: consumption of at least one alcoholic drink in the last seven days and total number of units of alcoholic drinks consumed per week.

Participants who had consumed at least one alcoholic drink in the past seven days (yes/no) were considered current drinkers; the remaining participants were considered non-drinkers.

For participants who were considered current drinkers, the level of risk of alcohol consumption was calculated based on the number of units of alcohol consumed in the last seven days. This value was calculated at the time of the interview by the interviewer together with the respondent, using the card with standard units of alcoholic drinks [Appendix 2 (Appendix 2: <https://www.actamedicaportuguesa.com/revista/index.php/amp/article/view/24100/15876>)]. The result was rounded up to the nearest whole number.

The level of risk of alcohol consumption was categorized as (1) low-risk and (2) higher-risk and was determined by the number of units of alcohol consumed in the previous seven days. Participants were categorized as having low-risk consumption if they had consumed up to seven units of a standard drink in the previous seven days, and as having higher-risk if they had consumed more than seven units. This classification was made considering the recommended maximum daily intake for people over 65 years of age [one standard drink or ten grams (g) of pure alcohol].^{27,28} This is a population group that is more vulnerable to the effects of alcohol, predisposing to a higher concentration and consequent toxicity of this substance.²⁸

"Childhood and Adolescence Circumstances" module

The information from the "Childhood and Adolescence Circumstances" module has been grouped into three dimensions: (a) socioeconomic status, (b) adverse experiences, and (c) family and social integration.

Socioeconomic status

This dimension includes variables that represent the individual's health and position on the socioeconomic scale, such as the family's financial situation, the provider's occupation, the quality of housing and the family's level of literacy.

Child health was categorized as (1) excellent, (2) very good, (3) good, (4) fair and (5) poor. The financial situation of the family, considering the period between birth and age 16, was categorized as (1) very favorable, (2) average, (3) poor and (4) variable. The occupation of the person supporting the household (providing most of the household income) was coded according to the International Standard Classification of Occupations as: (1) high-skilled occupation, (2)

medium-skilled occupation and (3) low-skilled occupation. High-skilled occupations refer to managers, professionals and technicians; medium-skilled occupations correspond to administrative support workers, service and sales workers, agricultural, forestry and fishery workers, and craft and similar workers; low-skilled occupations refer to factory workers, machine operators, and elementary occupations.

Housing quality was assessed based on the following characteristics of the dwelling in which the respondent lived at the age of ten (yes/no): the presence of a bath, the presence of a piped cold-water supply and the presence of overcrowding.

The presence of a bath was assigned one point, while its absence was scored as zero points; the presence of a piped cold water supply was assigned one point and its absence was scored as zero points; and overcrowding was calculated by dividing the 'number of people living in the household at age ten' by the 'number of rooms, including bedrooms but excluding kitchen, bathrooms and hallways'. A house was considered overcrowded if this ratio was greater than two and these cases were given a score of zero. Housing without overcrowding was scored as one point. The final housing quality score was obtained by adding the scores for the three aforementioned characteristics, resulting in a scale of zero to three points, with the lowest score representing the worst housing conditions.

Family literacy was estimated by the number of books available in the home at age ten: (1) none or very few (0 - 10 books), (2) enough to fill one shelf (11 - 25 books), (3) enough to fill one bookshelf (26 - 100 books), (4) enough to fill two bookshelves (101 - 200 books) and (5) enough to fill two or more bookshelves (more than 200 books).

Adverse experiences

The adverse experiences dimension included variables reporting hostile situations that may have occurred before the age of 17 in which individuals were physically harmed, either by being pushed, grabbed, slapped, hit or having something thrown at them. These situations of physical harm were characterized by the frequency with which the harm was inflicted by the mother, the father, and someone other than the parents. Four categories of frequency were considered: (1) often, (2) sometimes, (3) seldom, (4) never.

The participants who often suffered harm caused by their mother, father or someone else were classified as victims of physical abuse.

Family and social integration

This dimension includes variables characterizing the quality of relationships with parents and friends. The quality of the relationship with the mother and the quality of the relationship with the father before the age of 17 were classi-

fied in the following categories: (1) excellent, (2) very good, (3) good, (4) fair and (5) poor.

The frequency with which they felt lonely and the frequency with which they had a group of friends with whom they felt comfortable socializing between the ages of six and 16 both were classified as: (1) often, (2) sometimes, (3) rarely and (4) never.

Statistical analysis

Microsoft Excel[®] was used to optimize the cleaning and preparation of the database. The statistical analysis tool used to analyze the data was the Software Package for Social Science (SPSS) 29.0.0.0[®].

The association between each of the independent variables and the variable level of risk of alcohol consumption was assessed using the chi-squared hypothesis test or the Student *t*-test, with a significance level of 5%.

A binary logistic regression model was constructed to estimate the magnitude of the associations between the level of risk of alcohol consumption among current drinkers and sociodemographic variables and childhood and adolescence circumstances. Additionally, a multinomial logistic regression model including all participants (both non-drinkers and current drinkers) was developed to study these associations. The results were expressed as odds ratios (OR) with 95% confidence intervals (CI).

Ethical considerations

The SHARE project is subject to ongoing ethical review.

Waves seven and nine were reviewed and approved by the Ethics Committee of the Max Planck Society [Appendix 3 (Appendix 3: <https://www.actamedicaportuguesa.com/revista/index.php/amp/article/view/24100/15877>)], and the SHARE application at the national level was approved by the Ethics Committee of each country. The numerous reviews covered all aspects, including the sub-projects, and confirmed that the project complied with the relevant legislation and that the procedures were in line with international ethical standards.

All data provided to the scientific community is anonymized.

The SHARE data was requested by the principal investigator who signed a declaration of commitment to use it exclusively for its intended purpose.

RESULTS

From the 903 participants included in this study, 378 (41.9%) were male, 770 (85.3%) belonged to the over-65 age group, 656 (72.7%) had a low level of education, 695 (77.0%) were married or living in a civil partnership, 692 (77.8%) were retired, 317 (56.0%) said that the money available to the household lasted until the end of the month

with difficulty and 466 (54.1%) lived in a rural area.

Regarding alcohol consumption, 440 (48.7%) had consumed at least one alcoholic drink in the last seven days. The median number of units of alcohol consumed per week

was 7.50. Within this group of current drinkers, 220 (50.0%) practiced higher-risk alcohol consumption.

About childhood and adolescence circumstances, 47 (5.2%) reported poor health, 341 (39.3%) considered their

Table 1 – Prevalence of low-risk and higher-risk alcohol drinking patterns, according to sociodemographic variables

	Low-risk	Higher-risk
n (%)	n = 220 (50.0%)	n = 220 (50.0%)
Sex		
Men	89 (32.8%)	182 (67.2%)
Women	131 (77.5%)	38 (22.5%)
p-value	0.001	
Age (years)		
50 - 64	44 (65.7%)	23 (34.3%)
≥ 65	176 (47.2%)	197 (52.8%)
p-value	0.008	
Education level*		
None or still studying	13 (48.1%)	14 (51.9%)
Low	144 (47.2%)	161 (52.8%)
Medium	28 (54.9%)	23 (45.1%)
High	34 (60.7%)	22 (39.3%)
p-value	0.258	
Marital status		
Single	5 (33.3%)	10 (66.7%)
Married or registered partnership	169 (46.8%)	192 (53.2%)
Divorced	22 (78.6%)	6 (21.4%)
Widowed	24 (66.7%)	12 (33.3%)
p-value	< 0.001	
Job situation**		
Retired	163 (46.8%)	185 (53.2%)
Employed	24 (53.3%)	21 (46.7%)
Unemployed	9 (90.0%)	1 (10.0%)
Permanently sick or disabled	5 (62.5%)	3 (37.5%)
Homemaker	13 (76.5%)	4 (23.5%)
Other	6 (60.0%)	4 (40.0%)
p-value	0.014	
To make ends meet***		
With difficulty	79 (58.5%)	56 (41.5%)
Easily	71 (56.3%)	55 (43.7%)
p-value	0.802	
Area of residence†		
Urban area	100 (49.5%)	102 (50.5%)
Rural area	109 (49.8%)	110 (50.2%)
p-value	1.000	

*: 1 missing value; **: 13 missing values; ***: 337 missing values; †: 41 missing values.
p-values calculated by chi-square test and Fisher-Freeman-Halton's exact test.

financial situation to be bad, 147 (19.7%) described the profession of the person who supported their household as being low-skilled, 693 (78.8%) had between zero and ten books at home. The median quality of housing was 1.00.

In terms of adverse experiences, 505 (57.2%) suffered physical abuse from their mother, 382 (46.3%) from their father and 158 (18.7%) from someone else and 130 (15.5%) were victims of physical abuse on a regular basis. In addition, 96 (11.4%) said they did not have a good relationship with their mother and 146 (17.7%) with their father.

Concerning the field of sociability, 407 (47.6%) said they felt lonely and 300 (35.4%) did not often have a group of friends with whom they felt comfortable socializing.

Table 1 shows the bivariate analysis comparing sociodemographic variables and the consumption risk level. There were statistically significant differences between the proportion of participants with higher-risk alcohol consumption when comparing male and female participants (67.2% vs 22.5%, $r < 0.001$). There were also statistically significant differences between the two groups in terms of age group (34.3% vs 52.8%, $r = 0.008$), marital status ($r < 0.001$) and job situation ($r = 0.014$).

Table 2 shows the bivariate analysis, which compares the variables of childhood and adolescence circumstances and the alcohol consumption risk level. There were statistically significant differences in housing quality ($r = 0.002$), family literacy ($r = 0.026$), physical abuse ($r = 0.008$), quality of relationship with the father ($r = 0.035$) and frequency of feeling lonely ($r = 0.009$).

Table 3 presents binary logistic regression analysis to estimate the associations between current drinkers and sociodemographic characteristics and childhood and adolescence circumstances after model optimization. The analysis revealed that sex, physical abuse and quality of housing in childhood were independently associated with higher-risk alcohol consumption. Male sex seems to be a risk factor for higher-risk alcohol consumption (OR 6.444; 95% CI 4.329 - 11.111; $p < 0.001$). Suffering physical abuse in childhood (OR = 2.063; 95% CI 1.119 - 3.803) was significantly and positively associated with higher-risk alcohol consumption and better housing conditions in childhood were associated with lower odds of higher-risk alcohol consumption (OR = 0.767; 95% CI 0.608 - 0.968).

Comparing participants with low-risk and higher-risk levels of alcohol consumption to non-drinkers (considered as reference category within the multinomial regression model) (Table 4), we found that, after model optimization: the low-risk drinkers showed a significant positive association with male sex (OR = 2.312; 95% CI: 1.567 - 3.409), being divorced (OR = 2.988; 95% CI: 1.324 - 6.744), and better housing conditions in childhood (OR = 1.292; 95% CI: 1.077 - 1.550); and the higher-risk drinkers presented a

significant positive association with male sex (OR = 15.682; 95% CI: 10.041 - 24.491) and had a higher probability of having been victims of physical abuse in childhood (OR = 2.049; 95% CI: 1.200 - 3.497).

DISCUSSION

Comparison with other data/studies

In this study, 48.9% of participants reported currently consuming alcoholic beverages, with a higher prevalence among men (61.7%). The 2019 National Health Survey²⁹ or the 2022 Fifth National Survey on the Substances in Portugal³⁰ provide useful context for understanding alcohol use in older adults; however, they rely on different consumption indicators and temporal reference periods. While the present study measures weekly consumption, the national surveys mentioned rely on a 30-day or a 12-month period, which limit the ability to interpret and compare. Our findings offer a broader perspective on alcohol use patterns across varying definitions of consumption.

Both regression models showed that male sex and experiencing physical harm during childhood increased the odds of engaging in risky alcohol consumption behavior. Male sex emerged as a robust determinant of alcohol use across both low-risk and higher-risk drinking patterns. This finding is consistent with previous literature demonstrating that biological and psychosocial factors contribute to men's greater propensity for excessive alcohol use.^{11,31} It should be noted that we have tried a stratified analysis by sex with no relevant results for a discussion about this eventual effect modifier. Being a victim of physical abuse in childhood was associated with significantly higher odds of higher-risk alcohol consumption, which is consistent with prior research indicating that individuals who endured household abuse throughout childhood were more likely to engage in alcohol consumption practices.²⁰

Regarding the circumstances of childhood and adolescence examined in this study, the quality of childhood housing – used as a proxy for socioeconomic status – appears to be an important determinant of alcohol consumption risk among current drinkers. This suggests that individuals from lower socioeconomic backgrounds were more likely to engage in higher-risk drinking. This finding is consistent with evidence that links poorer living conditions to high-risk drinking.³² However, the association between childhood housing quality and alcohol consumption risk level was not consistent across analyses, with opposite directions of effect observed when comparing the low-risk drinkers with non-drinkers. This may reflect the limited sensitivity of the housing quality variable to assess socioeconomic factors. Considering the country's economic development during the period in which the study participants were children and adolescents, additional indicators – like parental income

Table 2 – Prevalence of low-risk and higher-risk alcohol drinking patterns, according to childhood and adolescence circumstances (section 1 of 2)

	Low-risk	Higher-risk
n (%)	n = 220 (50.0%)	n = 220 (50.0%)
Health status*		
Excellent	50 (45.5%)	60 (54.5%)
Very good	44 (51.8%)	41 (48.2%)
Good	93 (52.0%)	86 (48.0%)
Fair	19 (51.4%)	18 (48.6%)
Poor	8 (47.1%)	9 (52.9%)
<i>p</i> -value	0.852	
Family financial situation**		
Pretty well off financially	19 (67.9%)	9 (32.1%)
About average	111 (50.0%)	111 (50.0%)
Poor	75 (45.2%)	91 (54.8%)
It varied	7 (53.8%)	6 (46.2%)
<i>p</i> -value	0.161	
Main earner's occupational grade***		
High-skilled	33 (62.3%)	20 (37.7%)
Mid- skilled	115 (47.7%)	126 (52.3%)
Low-skilled	30 (42.9%)	40 (57.1%)
<i>p</i> -value	0.085	
Housing quality		
Mean (IQR)	1.42 (1)	1.11 (0)
Minimum; maximum	0;3	0;3
<i>p</i> -value	0.002	
Family literacy†		
0 – 10 books	149 (45.7%)	177 (54.3%)
11 – 25 books	25 (59.5%)	17 (40.5%)
26 – 100 books	17 (53.1%)	15 (46.9%)
101 – 200 books	11 (73.3%)	4 (26.7%)
> 200 books	13 (72.2%)	5 (27.8%)
<i>p</i> -value	0.026	
Mother physical harm††		
Often	16 (35.6%)	29 (64.4%)
Sometimes	50 (47.2%)	56 (52.8%)
Rarely	44 (51.8%)	41 (48.2%)
Never	95 (54.6%)	79 (45.4%)
<i>p</i> -value	0.13	
Father physical harm†††		
Often	7 (30.4%)	16 (69.6%)
Sometimes	35 (49.3%)	36 (50.7%)
Rarely	57 (49.6%)	58 (50.4%)
Never	104 (52.5%)	94 (47.5%)
<i>p</i> -value	0.258	

*: 28 missing values; **: 36 missing values; ***: 157 missing values; †: 24 missing values; ††: 67 missing values; †††: 78 missing values; ‡: 56 missing values; ‡‡: 63 missing values; ‡‡‡: 76 missing values; §: 55 missing values; §§: 55 missing values.

p-values were calculated using the chi-squared test and the Student's *t*-test for the numerical variable housing quality.

Table 2 – Prevalence of low-risk and higher-risk alcohol drinking patterns, according to childhood and adolescence circumstances (section 2 of 2)

	Low-risk	Higher-risk
Anybody else physical harm[†]		
Often	10 (55.6%)	8 (44.4%)
Sometimes	12 (46.2%)	14 (53.8%)
Rarely	21 (53.8%)	18 (46.2%)
Never	165 (49.4%)	169 (50.6%)
<i>p</i> -value	0.888	
Physical abuse		
Yes	24 (34.8%)	45 (65.2%)
No	182 (52.9%)	162 (47.1%)
<i>p</i> -value	0.008	
Relationship with the mother^{††}		
Excellent	72 (51.4%)	68 (48.6%)
Very good	47 (49.0%)	49 (51.0%)
Good	66 (48.5%)	70 (51.5%)
Fair	17 (56.7%)	13 (43.3%)
Poor	6 (50.0%)	6 (50.0%)
<i>p</i> -value	0.938	
Relationship with the father^{†††}		
Excellent	50 (43.9%)	64 (56.1%)
Very good	56 (65.1%)	30 (34.9%)
Good	63 (47.0%)	71 (53.0%)
Fair	24 (47.1%)	27 (52.9%)
Poor	10 (47.6%)	11 (52.4%)
<i>p</i> -value	0.035	
Frequency of feeling lonely[§]		
Often	22 (68.8%)	10 (31.3%)
Sometimes	19 (35.8%)	16 (64.2%)
Rarely	63 (56.8%)	48 (43.2%)
Never	103 (47.0%)	116 (53.0%)
<i>p</i> -value	0.009	
Frequency of feeling comfortable in friendships^{§§}		
Often	141 (50.0%)	141 (50.0%)
Sometimes	44 (50.0%)	44 (50.0%)
Rarely	13 (40.6%)	19 (59.4%)
Never	9 (64.3%)	5 (35.7%)
<i>p</i> -value	0.535	

*: 28 missing values; **: 36 missing values; ***: 157 missing values; †: 24 missing values; ††: 67 missing values; †††: 78 missing values; ‡: 56 missing values; ‡‡: 63 missing values; ‡‡‡: 76 missing values; §: 55 missing values; §§: 55 missing values.

p-values were calculated using the chi-squared test and the Student's *t*-test for the numerical variable housing quality.

and education – would provide a more accurate assessment of early-life conditions. Marital status, particularly being divorced, also seems to be an important determinant

within the low-risk drinkers, supporting evidence that changes in family structure or processes of marital transition may influence alcohol-related behaviors.³³ There appears to be

Table 3 – Binary logistic regression model: Associations between current drinkers (low-risk *versus* higher-risk) and sociodemographic characteristics and childhood and adolescence circumstances

	OR (95% IC)	p-value
Sex		
Men	6.444 (4.329-11.111)	< 0.001
Women	1	
Physical abuse		
No	1	
Yes	2.063 (1.119-3.803)	0.02
Housing quality	0.767 (0.608-0.968)	0.025

95% CI, 95% confidence interval. The logistic regression model was statistically significant ($p < 0.001$) and the Hosmer-Lemeshow test indicated a good model fit ($p = 0.946$). The model correctly predicted 71.4% of cases. The initial model included the following variables: sex, age group, marital status, job situation, family literacy, frequency of feeling lonely, physical abuse, housing quality and area of residence. The area under the ROC curve was 0.757.

a suggestion that being single is associated with higher-risk alcohol consumption. This aligns with current evidence indicating that single individuals are approximately two to four times more likely to engage in excessive drinking compared with those living with a partner.³⁴

This research also found a statistically significant association between sociodemographic characteristics (age, job situation), childhood and adolescence circumstances (family literacy, relationship with the father, frequency of feeling lonely), and the level of risk of alcohol consumption, which aligns with prior research.³⁵⁻⁴⁰

Limitations, methodological considerations and future research

Other methodological issues deserve to be discussed. One of the main limitations of this study is that it is a cross-sectional study and, as such, it does not allow us to infer a causal relationship, but only to estimate whether there is an association between the variables. However, it should be noted that there is a clear temporal sequence to the data, as two distinct moments in the individual's life cycle are considered (childhood and adulthood).

Moreover, relying on secondary data imposes limitations on the scope of aspects that can be addressed, both in characterizing childhood and adolescent circumstances and in assessing alcohol consumption risk levels.

The variables that characterize the circumstances of childhood and adolescence are subjective and depend entirely on the respondent's perspective of that period of their life and do not include questions that allow us to ascertain the existence of a family history of alcohol dependence. This omission is salient considering the numerous studies that underscore the substantial impact of environmental and social contexts on alcohol-use behaviors, including proximity to alcohol outlets.¹¹ Concurrently, the analysis also

lacked data on age of alcohol-use initiation, co-use of other substances, and participants' attitudes, social interactions, and risk perceptions – factors that shape drinking patterns.¹¹ Additionally, life events such as health problems, bereavement, emotional distress, social isolation, retirement, or loss of independence were not considered, despite their potential influence on alcohol-use behaviors through maladaptive coping. Furthermore, the age range of the subjects in the present study is predominantly composed of individuals aged 65 years and older, thereby constraining the extent to which the findings can be generalized.

Collecting accurate retrospective data can be affected by memory bias, particularly if recall differs between low- and higher-risk drinkers. Individuals with higher-risk alcohol consumption may not be able to recall or remember their childhood and adolescent circumstances in greater detail than individuals with lower risk alcohol consumption. This challenge has been overcome using a life history calendar that has been designed to help recall past events. Through SHARE studies, this framework has been shown to reliably capture older adults' reports of health and living conditions from ages 0 to 15, supporting its use for retrospective research.⁴¹

The question "How many units of alcoholic beverages have you consumed in the last seven days?" was used as a proxy for determining the risk level of alcohol consumption, which may not be representative of the usual pattern of consumption. The database also lacks variables that characterize attitudes, sociability, and perceptions of risk, which can affect the intensity, context, and motivations for alcohol consumption. In this sense, future studies should consider using a validated questionnaire, such as the Alcohol Use Disorders Identification Test (AUDIT), to assess the risk of excessive drinking.

Although people living in institutions are included in the SHARE sampling frame, they are not included in the survey database. As a result, this study does not cover the whole population. Since the group of people without a home of their own has a high preponderance in the study population. In wave 9 of SHARE in Portugal, 1103 households were contacted, and the overall response rate was 65.45%.²⁴ To date, no information is available to characterize the non-respondents.

Given the nature of the variables being studied, there may also be a social desirability bias. Knowing which behaviors are socially unacceptable can be a challenge in a CAPI data collection process. Respondents may tend to answer what they consider to be socially acceptable, influenced by the culture and social norms of the country, thus distorting the reality of alcohol consumption patterns and circumstances during childhood and adolescence.

Despite its limitations, this study is strengthened by a

Table 4 – Multinomial logistic regression model: Associations between the level of risk of alcohol consumption (non-drinkers versus low-risk and non-drinkers *versus* higher-risk) and sociodemographic characteristics and childhood and adolescence circumstances

Risk level ^a		OR (95% IC)	p-value
Low-risk	Sex		
	Men	2.312 (1.567 - 3.409)	< 0.001
	Women	1	
	Marital status		
	Single	1.218 (0.376 - 3.943)	0.742
	Married or in a civil partnership	1.576 (0.914 - 2.715)	0.102
	Divorced	2.988 (1.324 - 6.744)	0.008
	Widowed	1	
	Physical abuse		
	No	1	
Yes	0.956 (0.561 - 1.629)	0.868	
	Housing quality	1.292 (1.077 - 1.550)	< 0.001
Higher-risk	Sex		
	Men	15.682 (10.041 - 24.491)	< 0.001
	Women	1	
	Marital status		
	Single	3.077 (0.906 - 10.452)	0.072
	Married or in a civil partnership	1.644 (0.798 - 3.385)	0.178
	Divorced	0.915 (0.257 - 3.252)	0.890
	Widowed	1	
	Physical abuse		
	No	1	
Yes	2.049 (1.200 - 3.497)	0.008	
	Housing quality	1.020 (0.821 - 1.267)	0.858

^a: The reference category is non-drinkers (absence of risk). 95% CI: 95% confidence interval. The Hosmer-Lemeshow test indicated a good model fit ($p = 0.224$). The model correctly predicted 61.1% of cases. The initial model included the variables that were statistically significant in the bivariate analysis, when the alcohol consumption risk level variable was operationalized into three categories (non-drinkers, low-risk, higher-risk): sex ($p < 0.001$), age group ($p = 0.01$), educational level ($p = 0.028$), marital status ($p < 0.001$), job situation ($p = 0.026$), housing quality ($p = 0.002$), family literacy ($p = 0.006$), father physical harm ($p = 0.035$), physical abuse ($p = 0.015$) and frequency of feeling lonely ($p = 0.038$).

large, representative sample and the inclusion of multiple sociodemographic and socioeconomic characteristics. The use of a comprehensive set of health determinants and SHARE data enhances the robustness and reliability of the findings. Its originality provides a foundation for future research, highlighting the need for comparative studies using diverse methodologies.

This study adds to the knowledge of the subject studied and also has important applications in the field of public health, in that it can help in the design of programs and projects aimed at at-risk groups and supports a personalized and precise approach to combating excessive alcohol consumption.

In order to reduce the incidence of alcohol-related health harm, we need to continue to understand which early life factors may underlie drinking patterns, which drinking pat-

terns emerge over the life cycle, and which trajectories lead to poorer health outcomes.

It is important that the circumstances of childhood and adolescence continue to be taken into account in the study of risk behaviors, in order to draw conclusions about their real impact on the adoption of these behaviors and to design policies and interventions targeted at disadvantaged and particularly vulnerable populations.

CONCLUSION

The present study found a positive association between physical abuse in childhood and higher-risk alcohol consumption, whereas living in better housing conditions during this developmental stage showed a protective association. Being male was strongly associated with both low- and higher-risk drinking patterns.

DATA AVAILABILITY

Access to the data collected by SHARE is free to all individuals who can prove that they are part of a scientific institution. This can be requested from <http://www.share-project.org/dataaccess.html>.

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The authors have declared that no AI tools were used during the preparation of this work.

AUTHOR CONTRIBUTIONS

CMM: Conceptualization, methodology, statistical analysis, writing - original draft preparation.

PA: Conceptualization, methodology, statistical analysis support, supervision, writing – review.

All authors approved the final version to be published.

PROTECTION OF HUMANS AND ANIMALS

The authors declare that the procedures were followed according to the regulations established by the Clinical Re-

search and Ethics Committee and to the Helsinki Declaration of the World Medical Association updated in October 2024.

DATA CONFIDENTIALITY

The authors declare having followed the protocols in use at their working center regarding patients' data publication.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

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