

Research Article

# Prevalence of Alcohol Consumption in Mozambique: Analysis Based on Household Budget Survey (IOF 2022)

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## Abstract

Worldwide the excessive consumption of alcohol in 2016 was considered as responsible for 5% of deaths and more than 200 illnesses and injuries. There are several studies conducted around the world to understand the prevalence of alcohol consumption. However, in Mozambique, there are few studies conducted to determine the prevalence of alcohol consumption, as well as, to characterize the consumers, using data from nationally representative surveys. The current study, identify the prevalence of alcohol consumption in Mozambique, according to socio-demographic characteristics of population using data from the Household Budget Survey (IOF 2022) carried out by the National Statistics Institute in 2022. The analysis of data was based in descriptive statistics. The study results reveal that the prevalence of alcohol consumption in Mozambique is 24.6%, higher among men (27%), compared to woman (23%). The prevalence is high among people between 18 - 65 years old (26%) and people with higher education (34%). Around 17% of teenagers, between 15 and 17 years old, in both sexes, purchased and consumed alcoholic beverages, despite the prohibition of Mozambican legislation. The provinces of Tete (37.2%), Maputo (32.3%) and Zamb ézia (30.3%) have the highest prevalence of alcoholic beverages consumption and the province of Niassa (3.7%) has the lowest prevalence. Beer (46%) is the most consumed alcoholic beverage in Mozambique, followed by traditional alcoholic beverages (44%).

## Keywords

Prevalence, Alcoholic Beverages, Mozambique

## 1. Introduction

Alcohol is a psychoactive substance that has been widely used in many societies for centuries, and is impregnated with multiple meanings, purposes and rituals specific to each culture [8, 33]. The consumption of alcohol has the potential to generate two distinct effects on the human body: (i) stim-

ulating effect, causing a feeling of euphoria, disinhibition and talkativeness, in the first phase of ingestion; and, (ii) depressant effect, affecting motor coordination, lack of sleep control, or even leading to a state of coma [32]. Typically consumed as food, but also for therapeutic purposes, alcohol have a sym-

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bolic meaning when used in customs, social, cultural and religious rituals [2, 17, 21, 33].

The consumption of alcohol and its impact on people's health and society is a topic of great interest to scholars, policy makers and the general public. However, there is heterogeneity of results and controversy in studies on alcoholic beverages. The great interest in studying aspects related to the consumption of alcohol is based in the understanding that it is one of the risk factors for diseases and social harm.

According to the previous studies, the consumption of alcohol, especially in excess<sup>1</sup> is associated with a range of negative outcomes, such as illness, crime, road accidents, and dependence [1, 20, 31, 39]. For example, in 2016, the consumption of alcohol was a causal factor in more than 200 diseases and injuries; and the annual mortality resulting from alcohol consumption is around three (03) million every year (5.3% of all deaths) which is higher than that caused by diseases such as tuberculosis, diabetes, and Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome [40].

Some authors highlight the benefits of moderate consumption<sup>2</sup> for health, mainly in the cardiovascular and psychosocial benefits system [6, 13, 15, 21]. Others authors argue that there is no healthy consumption of alcoholic beverages [3, 18, 36, 40].

Despite the controversial considerations regarding the risks of consuming alcohol for public health and society, high levels of consumption prevail in several countries. For example, the prevalence of alcohol consumption around the world in 2016 was 43% of the population over the age of 15 years old, mainly in Europe, America and the Western Pacific, where more than half of the population consumes alcoholic beverages [40].

Statistics of the prevalence of alcohol consumption around the world indicate the highest levels in Luxembourg (96%), Switzerland and Ireland (81%), Lithuania, Germany, Australia and Norway (79%), Austria (78%), Belgium (77%), Latvia, Czech Republic, France, Andora, and New Zealand (75%); the countries with lowest levels of alcohol consumption are the following: Libya, Kuwait, and Yemen, with 0%; Mauritania, Pakistan, Sudan, Syria, Bangladesh, Morocco, Egypt and Jordan, with 1% [31].

Reviews of literature indicate the tendency of increasing the percentage of the population that consumes alcohol and the amount consumed. For example, research from Brazil indicates an increase in the abusive consumption of alcoholic beverages by around 3.4 percentage points between 2013 and 2019 [10]. Studies carried out in the United States of America, in 2001-2002 and 2012-2013 and in Portugal, comparing data from adolescents in the period between 1995 and 2011, also indicate a significant increase in the prevalence of alcohol

consumption [11, 28].

Unhealthy Alcohol Use is a major public health challenge, particularly in low- and middle-income countries, like Mozambique [24]. Particularly in Mozambique and despite alcohol consumption being considered a public health problem, in 2016, the per capita alcohol consumption in Mozambique was estimated at 2.3 liters of pure alcohol per year<sup>3</sup>, and the prevalence of consumption was estimate in 21.0%, 30.5% among men and 12.3% among women [5, 31, 39].

A study from Mozambique show that the prevalence of alcohol consumption increased with age and education among women; and with income, among men [26]. In general, there are preponderance of men over women in the consumption of alcoholic beverages in Mozambique [26, 27]. Regarding the consumption of alcoholic beverages by risk groups, based on data from pregnant women at the José Macamo General Hospital, in the City of Maputo, was found that 12.8% of pregnant women assisted were alcoholic beverage consumers [4]. With the same concern in Chitima hospital, Tete Province, was found high level of prevalence (86%) of alcohol consumption among pregnant women [37].

There are few studies using data from nationally representative surveys, to determine the prevalence of alcohol consumption, as well as, to characterize the profile of consumers in Mozambique. The studies available, in general, focus on analysing the perceptions of alcohol consumption, as a public health problem and in investigation of vulnerable groups such as pregnant women and children [4, 5, 7, 23, 25, 26, 30, 37, 38]. The current study identifies the prevalence of alcohol consumption in Mozambique, according to population sociodemographic characteristics, using nationally representative data.

## 2. Methodology

To describe the prevalence of alcohol consumption in Mozambique, data from the Household Budget Survey (IOF 2022 – acronym in Portuguese), carried out by the National Statistics Institute (INE- acronym in Portuguese) were used in this study. The sample from IOF 2022 was probabilistic, stratified and multi-stage, covering more than 15 thousand households. The IOF 2022 was not specific to collect information on the consumption of alcoholic beverages but it aims to collect information about the type and destination of consumption expenditure, as well as, information on various resources related to the living conditions of households. Therefore, prevalence in this study refers to the number of households that declared that they had purchased alcoholic drinks or that they had spent some money on alcoholic beverages in the reference period of the survey.

In the current study, the alcoholic beverages were grouped into four categories, “beer”, “wine”, “spirits” and “traditional

<sup>1</sup>Higher than moderate consumption [13]

<sup>2</sup>According to [13], moderate alcohol consumption is defined by the United States Department of Health and Human Services belonging to the United States Department of Agriculture (USDA), when it does not exceed 14 grams of ethanol per day, to for women, and 28 grams of ethanol per day for men, assuming that the human liver system can process up to 15 grams of ethanol per hour.

<sup>3</sup>The 2.3 liters of pure alcohol is equivalent to 20 liters of wine, with a 12% alcohol content, or alternatively, to 46 liters of beer with 5% alcohol content.

drinks". The "spiritual drinks" category includes industrial drinks with higher alcohol content such as whiskey, gin, vodka and tequila. The traditional alcoholic beverages category includes all homemade drinks.

The most used variables to study prevalence of alcohol consumption, considering sociodemographic characteristics of the consumers are the following: age, education, region of residence, gender; income, occupation and marital and emotional status [7, 14, 26, 27, 37]. In the current research, were used the following variable used in similar studies and available on database of the survey: gender, age, education, region of residence and the type of alcoholic beverages consumed. The analysis was based on descriptive statistics.

### 3. Results and Discussion

The IOF 2022 surveyed 16.7 million Mozambicans aged 15 years old and over, of whom around four (4) million people (24.6%) declared expenditure on alcoholic beverages (Table 1). The prevalence of alcohol consumption found in this study, 24.6%, is consistent with the prevalence of 21% found by World Health Organization using data from 2016 [40].

The highest prevalence of expenditure on alcoholic beverages is found among the population from provinces of Tete (37.2%), Maputo (32.3%) and Zambézia (30.3%). The Prov-

inces of Niassa (3.7%), Cabo Delgado (16%) and Manica (16%) has the lowest prevalence. By region of the residence, there are no major differences in the prevalence of expenditure on alcohol, with 25.3% in rural areas and 23.4% in urban areas.

From the gender perspective, data show highest prevalence of expenditure on alcohol among males, with around 27% compared to 23% of females. The differences found between sexes in alcohol consumption, follows the pattern of many studies made in Mozambique, China and in Brazil [10, 14, 19, 26, 27].

By age, the data from Table 1 reveal that the highest prevalence on alcohol consumption is in people aged between 18 and 65 years old (26.3%). The data also reveal that around 17% of teenagers, aged between 15 and 17 years old have declared purchasing alcoholic beverages. According to Mozambique legislation (Decree No. 54/2013) it is illegal to anyone under the age of 18 years old, to buy and consume alcoholic beverages [29]. It seems that this legislation is not being fully complied with by beverage sellers and household members. The results regarding the consumption of alcoholic beverages by adolescents in the current study is similar with that found in other studies in Mozambique and in Brazil [16, 25, 30, 34, 39]. The high prevalence of teenagers consuming alcoholic beverages, in Brazil, is due to the easy access to alcohol at parties, bars, bottle stores and even in their own homes [16].

**Table 1.** Percentage of Mozambicans aged 15 years old and over who reported spending on alcoholic beverages by gender, according to socio-demographic characteristics.

	Men (M)		Women (W)		Total with alcohol expenses		Total ≥ 15 years (10 <sup>3</sup> )
	%	n (10 <sup>3</sup> )	%	n (10 <sup>3</sup> )	%	MW (10 <sup>3</sup> )	
Province							
Cabo Delgado	16,9	110	15,3	106	16,1	216	1343
Gaza	25,3	77	18,6	93	21,1	170	806
Inhambane	30,0	110	19,7	104	23,9	214	896
Manica	20,0	109	13,7	86	16,7	195	1169
Maputo City	31,0	117	25,6	109	28,1	226	803
Maputo	36,9	255	28,4	233	32,3	489	1514
Nampula	22,7	352	20,7	340	21,7	692	3187
Niassa	5,2	25	2,5	13	3,7	38	1022
Sofala	26,5	174	26,1	196	26,3	369	1405
Tete	38,3	320	36,1	306	37,2	626	1683
Zambézia	33,8	455	27,3	424	30,3	879	2899
Total	26,9	2105	22,5	2010	24,6	4115	16725
Region of residence							
Urban	25,6	759	21,5	716	23,4	1475	6299

	Men (M)		Women (W)		Total with alcohol expenses		Total ≥ 15 years (10 <sup>3</sup> )
	%	n (10 <sup>3</sup> )	%	n (10 <sup>3</sup> )	%	MW (10 <sup>3</sup> )	
Rural	27,8	1346	23,2	1293	25,3	2639	10426
Total	26,9	2105	22,5	2010	24,6	4115	16725
Age group (years)							
15-17	17,7	175	16,9	158	17,3	333	1927
18-65	28,9	1854	24,0	1789	26,3	3643	13863
> 65	19,0	76	11,7	63	14,8	139	936
Total	26,9	2105	22,5	2010	24,6	4115	16725
Highest education level							
No formal education	26,8	720	22,4	1063	24,0	1783	7424
Primary school	27,1	892	20,8	571	24,2	1463	6035
Secondary school	25,9	428	25,7	338	25,8	766	2967
University	36,0	65	31,7	38	34,3	103	299
Total	26,9	2105	22,5	2010	24,6	4115	16725

For the variable education, data from [Table 1](#) show that the prevalence increases with the level of education completed. Therefore, 24% of people with no formal education, 26% with secondary school and 34% with higher education, declared expenditure on alcoholic beverages. In the literature, we didn't find consensus in the prevalence of alcoholic beverages consumption among people with different level of formal education. Some authors report higher prevalence among people with higher levels of formal education [\[10\]](#). Others authors indicated a higher prevalence among those

with no formal education or with low levels of formal education [\[14, 19\]](#). But also there are authors that found no relationship [\[26\]](#).

With regard to the type of alcoholic beverages purchased, the data in [Table 2](#) show highest prevalence of consumption of beer, with 46%, and traditional alcoholic beverages (home-made), with 44%. Data from Mozambique indicate that beer is the most popular alcoholic beverages in the country [\[35\]](#). Worldwide, the beer is also the most consumed alcoholic beverage in the world [\[22, 12\]](#).

**Table 2.** Percentage of Mozambicans spending on alcoholic beverages, by type of drink, according to socio-demographic characteristics.

Selected characteristics	n (10 <sup>3</sup> )	%	Bear %	Wine %	Spirits %	Traditional %
Province						
Cabo Delgado	215634	100	38,2	0,1	8,1	53,5
Gaza	170269	100	54,2	1,9	9,7	34,2
Inhambane	214163	100	43,0	0,4	3,2	53,4
Manica	194986	100	42,1	4,1	18,9	34,9
Maputo City	225941	100	61,7	1,4	12,1	24,8
Maputo	488591	100	56,8	0,6	15,5	27,0
Nampula	691952	100	39,8	0,0	4,6	55,6
Niassa	38243	100	52,1	0,8	4,0	43,1
Sofala	369427	100	47,1	1,4	7,6	43,9

Selected characteristics	n (10 <sup>3</sup> )	%	Bear %	Wine %	Spirits %	Traditional %
Tete	626428	100	47,0	1,6	8,0	43,4
Zambézia	879111	100	39,5	0,8	10,7	49,0
Total	4114746	100	45,6	1,0	9,4	44,0
Region of residence						
Urban	1475344	100	56,0	1,2	12,7	30,1
Rural	2639402	100	39,8	0,9	7,6	51,8
Total	4114746	100	45,6	1,0	9,4	44,0
Sex						
Men	2105176	100	44,2	1,0	10,5	44,3
Women	2009570	100	47,2	0,9	8,2	43,7
Total	4114746	100	45,6	1,0	9,4	44,0
Age group (years)						
15-17	333261	100	53,3	0,4	7,5	38,8
18-65	3642631	100	45,3	1,0	9,6	44,2
> 65	138 853	100	37,0	1,6	9,8	51,6
Total	4114746	100	45,6	1,0	9,4	44,0
Highest education level						
No formal education	1783	100	39,2	0,9	6,8	53,1
Primary school	1463	100	44,6	1,2	11,2	43,0
Secondary school	766	100	59,7	0,8	12,0	27,4
University	103	100	67,1	0,5	9,2	23,2
Total	4115	100	45,6	1,0	9,4	44,0

The consumption of traditional alcoholic beverages is dominant in the provinces of Nampula (55.6%), Cabo Delgado (53.5%) and Inhambane (53.4%). The provinces of Maputo and Maputo City have more prevalence on beer, with 56.8% and 61.7%, respectively. Alcoholic beverages with higher alcohol content, falling in “spirits” category, are more consumed in the provinces of Manica (18.7%) and Maputo (15.5%).

Regarding to the region of residence, data show that in rural areas there is relatively more consumption of traditional alcoholic beverages (51.8%) and in urban areas beer is predominant (56.0%) (Table 2). Traditional drinks are appointed as popular in rural area of Mozambique, where the population often consume in traditional ceremonies and festivals [35]. Therefore, this might be the main reason of high prevalence of consumption of traditional alcoholic drinks in rural area. The other reason may be economic. Taking in consideration the average monthly household expenditure in 2022, for the urban area, which is 12,587.00 Meticaís (Mozambican currency), compared to 6,680.00 Meticaís for the rural [9]. So, it can be inferred that the consumption of traditional alcoholic beverages

in Mozambique (relatively cheaper), in rural areas, can be related to purchasing power.

For age group, data show a higher prevalence of consumption of traditional alcoholic beverages (51.6%), among the elderly (people over 65 years old), while people aged from 15 to 17 years old tend to consume more beer than other kind of drink. For people aged from 18 to 65 years old there is a balance between the consumption of beer and traditional drinks (Table 2). In Brazil adolescents consume more spirits drinks [38].

Data from Table 2 show that there are no major differences between men and women in the consumption of alcoholic beverages, in all four types of drinks considered in the current study, except beer where there is little preponderance of women (47.2%) compared to men (44.2%). Regarding level of education, the data show that people with secondary school (60%) and university (67%) tend to consume more beer, while those with no formal education (53%) and those who completed primary school (43%), tend to consume traditional alcoholic beverages.

## 4. Conclusion

The prevalence of alcohol consumption in Mozambique is 24.6%, higher among men, 27%, compared to woman, 23%. The prevalence is high among people between 18 - 65 years old (26%) and people with higher education (34%). Around 17% of teenagers, between 15 and 17 years old, in both sexes, purchased and consumed alcoholic beverages, in violation of Mozambican legislation, Decree No. 54/2013.

The provinces of Tete (37.2%), Maputo (32.3%) and Zambézia (30.3%) have the highest prevalence of alcoholic beverages consumption; and the provinces of Niassa (3.7%), Cabo Delgado (16%) and Manica (16%) have the lowest prevalence.

Beer (47%) is the most consumed alcoholic beverage in Mozambique, followed by traditional alcoholic beverages (44%). Beer is more consumed in urban areas, by young people, mainly teenagers, and by those with secondary and higher education. Traditional alcoholic beverages are more consumed by older people, especially the elderly, and by people without any formal education or that concluded primary school.

## Abbreviations

INE: Instituto Nacional de Estatística (National Institute of Statistics)

IOF: Inquérito Sobre o Orçamento Familiar (Household Budget Survey)

## Author Contributions

**Sandre José Macia:** Conceptualization, Software, Formal Analysis, Validation, Investigation, Writing - original draft, Methodology, Visualization, Writing - review & editing

**Carlos Francisco Xavier Filimone:** Conceptualization, Formal Analysis, Validation, Investigation, Writing - original draft, Methodology, Visualization, Writing - review & editing

**Américo António Humulane:** Conceptualization, Validation, Writing - original draft, Visualization, Writing - review & editing

## Conflicts of Interest

The authors declare no conflicts of interest.

## References

- [1] Aksoy, A., Bilgic, A., Yen, S. T., & Urak, F. (2019). Determinants of household alcohol and tobacco expenditures in Turkey. *Journal of Family and Economic Issues*, 40, 609-622. <https://doi.org/10.1007/s10834-019-09619-1>
- [2] Bertoni, L. M. (2006). Reflexões sobre a História do

Alcoolismo. *Faculdades Integradas Fafibe. Bebedouro-SP.*

- [3] Burton, R., & Sheron, N. (2018). No level of alcohol consumption improves health. *The Lancet*, 392(10152), 987-988.
- [4] Canda, E. D. (2014). Estudo exploratório sobre o consumo de álcool e atitudes sobre a gravidez e maternidade em grávidas uterinas dos Hospitais Gerais: José Macamo e Mavalane (Doctoral dissertation). Mestre em Psicologia - Especialização em Psicologia da Educação e Desenvolvimento Humano. Universidade Católica Portuguesa. 82 p,
- [5] Cau, B., Arnaldo, C., Sengo, M., & Maloa, J. (2019). Percepção do consumo de álcool como um problema de saúde pública na cidade de Maputo: variação sócio-espacial e factores influentes. *Revista Científica da UEM: Série Letras e Ciências Sociais*, 1(2). Disponible in Visualização de PERCEPÇÃO DO CONSUMO DE ALCOOL COMO UM PROBLEMA DE SAÚDE PÚBLICA NA CIDADE DE MAPUTO: variação sócio-espacial e factores influentes.
- [6] Chiva-Blanch, G., & Badimon, L. (2019). Benefits and risks of moderate alcohol consumption on cardiovascular disease: current findings and controversies. *Nutrients*, 12(1), 108.
- [7] Chiziane, H. A (2007). Motivações dos jovens para o consumo de bebidas alcoólicas: uma análise a partir do Bairro Central, na Cidade de Maputo.
- [8] Chekole, Y. A. (2020). Prevalence of alcohol use and associated factors among Dilla University students, Dilla Town, Southern Ethiopia: a cross-sectional study. *Journal of addiction*, 2020, 1-8. <https://doi.org/10.21203/rs.3.rs-20021/v1>
- [9] Instituto Nacional de Estatística – INE (2023). Inquérito sobre o Orçamento Familiar 2022. Relatório Final. Maputo.
- [10] Da Silva, L. E. S (2022). Prevalência de consumo abusivo de bebidas alcoólicas na população adulta brasileira: Pesquisa Nacional de Saúde 2013 e 2019. *Revista do SUS. Epidemiologia e Serviços de Saúde*, Brasília, 31(nspe1): e2021379, 2022.
- [11] Dawson, D. A., Goldstein, R. B., Saha, T. D., & Grant, B. F. (2015). Changes in alcohol consumption: United States, 2001–2002 to 2012–2013. *Drug and alcohol dependence*, 148, 56-61.
- [12] Damjanović, K., & Varga, I. (2021). World beer production and hops use. *Research Journal of Agricultural Science*, 53(3).
- [13] Ferreira, M. P., & Weems, M. S. (2008). Alcohol consumption by aging adults in the United States: health benefits and detriments. *Journal of the American Dietetic Association*, 108(10), 1668-1676. <https://doi.org/10.1016/j.jada.2008.07.011>
- [14] Garcia, L. P.; de Freitas, L. R. S. (2015). Consumo abusivo de álcool no Brasil: resultados da Pesquisa Nacional de Saúde 2013. *Epidemiol. Serv. Saúde* 24 (2). Jun 2015. Disponível em: <https://doi.org/10.5123/S1679-49742015000200005>
- [15] Jones, A., McMillan, M. R., Jones, R. W., Kowalik, G. T., Steeden, J. A., Pruessner, J. C.,... & Muthurangu, V. (2013). Habitual alcohol consumption is associated with lower cardiovascular stress responses—a novel explanation for the known cardiovascular benefits of alcohol? *Stress*, 16(4), 369-376.

- [16] Malta, D. C., Mascarenhas, M. D. M., Porto, D. L., Duarte, E. A., Sardinha, L. M., Barreto, S. M., & Morais Neto, O. L. D. (2011). Prevalência do consumo de álcool e drogas entre adolescentes: análise dos dados da Pesquisa Nacional de Saúde Escolar. *Revista Brasileira de Epidemiologia*, 14, 136-146.
- [17] Marques, A. C., Ramos, F. P., & Bertolote, J. M. (2022). *Alcoolismo Hoje*. Artmed Editora.
- [18] Mehta, G., & Sheron, N. (2019). No safe level of alcohol consumption—Implications for global health. *Journal of hepatology*, 70(4), 587-589.
- [19] Millwood, I. Y., Li, L., Smith, M., Guo, Y., Yang, L., Bian, Z.,... & Chen, Z. (2013). Alcohol consumption in 0.5 million people from 10 diverse regions of China: prevalence, patterns and socio-demographic and health-related correlates. *International journal of epidemiology*, 42(3), 816-827. <https://doi.org/10.1093/ije/dyt078>
- [20] Mikolasek, J. (2015). *Social, demographic and behavioral determinants of alcohol consumption* (No. 10/2015). IES Working Paper.
- [21] Mukamal, K. J., & Rimm, E. B. (2008). Alcohol consumption: risks and benefits. *Current atherosclerosis reports*, 10(6), 536-543.
- [22] Nogueira, L. C., do Rio, R. F., Lollo, P. C., & Ferreira, I. M. (2017). Moderate alcoholic beer consumption: the effects on the lipid profile and insulin sensitivity of adult men. *Journal of Food Science*, 82(7), 1720-1725. <https://doi.org/10.1111/1750-3841.13746>
- [23] Nhazilo, D. A. F. (2014). Representação de identitárias construídas entre de mulheres consumidoras de bebidas Moçambique na Cidade de Maputo: uma análise a partir do Bairro das Forças Populares da Liberdade de Moçambique na cidade de Maputo, 2014.
- [24] O'Grady, M. A., Mootz, J., Suleman, A., Sweetland, A., Teodoro, E., Anube, A. & Wainberg, M. L. (2022). Mobile technology and task shifting to improve access to alcohol treatment services in Mozambique. *Journal of Substance Abuse Treatment*, 134, 108549. <https://doi.org/10.1016/j.jsat.2021.108549>
- [25] Pacala, D. C. R. (2015). *Vivências psicológicas e o consumo de álcool das adolescentes grávidas da cidade de Maputo*. Universidade Católica Portuguesa. Mestrado em Psicologia (Psicologia Clínica e da Saúde).
- [26] Padrão P, Damasceno A, Silva-Matos C, Laszczńska O, Prista A, Gouveia L, Lunet N (2011). Alcohol consumption in Mozambique: regular consumption, weekly pattern and binge drinking. *Pub Med*. 115(2), pp. 87-93. <https://doi.org/10.1016/j.drugalcdep.2010.10.010>
- [27] Pires, J., Padrão, P., Damasceno, A., Silva-Matos, C., & Lunet, N. (2012). Alcohol consumption in Mozambique: results from a national survey including primary and surrogate respondents. *Annals of human biology*, 2012 Nov-Dec; 39(6): 534-537. <https://doi.org/10.3109/03014460.2012.710249>
- [28] Precioso, J.; Correia, C.; Sousa, I.; Samorinha, C. (2016). Evolução do consumo de álcool em adolescentes portugueses escolarizados: beber álcool ainda estar à moda?. *Revista Interacções*, [S. l.], v. 11, n. 39, 2016. <https://doi.org/10.25755/int.8777>
- [29] República de Moçambique (2013). Decreto n.º 54/2013: Aprova o Regulamento sobre o Controlo da produção, Comercialização e Consumo de Bebidas Alcoólicas. Maputo. Disponível em <https://gazettes.africa/archive/mz/2013/mz-government-gazette-series-i-dated-2013-10-07-no-80.pdf> Acedido em 01 de Julho de 2023.
- [30] Ribeiro, A., Rodrigues-Willhelm, A., do Carmo Oliveira de Lemos, V., Vilanova, F., Pinto Pizarro de Freitas, C., Dede, E., Pereira Teixeira, M. A., Koller, S. E. (2020). A network analysis of substance consumption patterns among students of public schools in mozambique. *Universitas Psychologica*, 19, 1-10. <https://doi.org/10.11144/Javeriana.upsy19.nasc>
- [31] Ritchie, H., & Roser, M. (2018). Alcohol consumption. *Our world in data*. Available at: <https://ourworldindata.org/alcohol-consumption>
- [32] Rodrigues, A. P. C. (2015). *Consumos de Bebidas Alcoólicas e Falsos Conceitos-Questões de Género Numa População Que Recorre aos Serviços da Unidade de Cuidados de Saúde Personalizados em Peso da Régua* (Doctoral dissertation, Universidade Fernando Pessoa (Portugal)).
- [33] Sales, E. (2010). Aspectos da história do álcool e do alcoolismo no século XIX. *Cadernos des História UFPE*, 7(7).
- [34] Souza, J. A. (2018). Consumo de Bebida Alcoólica entre Adolescentes: Prevalência e Fatores Associados. Universidade Estadual de Feira de Santana (UEFS). Departamento de Saúde. Mestrado Profissional em Saúde Coletiva. 30 de Agosto de 2018. P. 62.
- [35] Statista. Alcoholic Drinks – Mozambique. (2023). <https://www.statista.com/outlook/cmo/alcoholic-drinks/mozambique>
- [36] Topiwala, A., Ebmeier, K. P., Maullin-Sapey, T., & Nichols, T. E. (2021). No safe level of alcohol consumption for brain health: observational cohort study of 25,378 UK Biobank participants. *MedRxiv*, 2021-05.
- [37] Xavier, S. P., José J. M., Cote, N. D., Xavi, R., & Victor, A. (2022). Prevalence and associated factors of alcohol consumption among pregnant women attending antenatal care in a Rural District in Tete, Mozambique. *Research Square*; 2022. <https://doi.org/10.21203/rs.3.rs-2186259/v1>
- [38] Wainberg, M., Oquendo, M. A., Peratikos, M. B., Gonzalez-Calvo, L., Pinsky, I., Duarte, C. S.,... & Audet, C. M. (2018). Hazardous alcohol use among female heads-of-household in rural Mozambique. *Alcohol*, 73, 37-44.
- [39] Willhelm, A. R., Cabral, J. C. C., Steiger, J. O., da Silva, J. F. F., Ugarte, L. M., & de Almeida, R. M. M. (2015). Consumo de álcool na adolescência e relação com uso excessivo de bebidas alcoólicas dos pais: estudantes de quatro escolas de Porto Alegre. *Psico*, 46(2), 208-216.
- [40] World Health Organization. (2018). Global status report on alcohol and health 2018. World Health Organization. [https://apps.who.int/iris/bitstream/handle/10665/148114/9789241564854\\_eng.pdf](https://apps.who.int/iris/bitstream/handle/10665/148114/9789241564854_eng.pdf)