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Does Malory Archer's Drinking Fit Within the Drinking Guidelines for an Elderly Lady?

Katherine Smith

The Centre for Interdisciplinary Science, University of Leicester
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Abstract

This paper looks at the alcohol consumption of Malory Archer, and calculates the average unit consumption per week to calculate whether Malory's drinking fits within the recommended unit intake as given by the NIAAA and CSAT. It has been determined that based on the number of drinks consumed during screen time that on average Malory drinks 8.719 units per week (1.246 units per day), meaning that Malory drinks less than the guidelines given by the NIAAA and CSAT for an elderly lady. However, given the fact that Malory is not shown as much in the TV show for reliable unit intake, it is very likely that she does drink more than the NIAAA and CSAT limits based on basic observations, meaning that the calculated values are lower than expected.

Introduction

Malory Archer, the boss of the International Secret Intelligence Service, is often seen with a drink in her hand - the opening sequence of the show even depicts her holding a glass [1]. Therefore this paper looks at the amount of alcohol that Malory consumes on screen to calculate whether the average unit intake is more or less than the NIAAA and CSAT recommendations.

Assumptions

There are multiple different assumptions being made when calculating Malory Archer's alcohol intake. Firstly, it is assumed that all of the drinks shown in Malory's hands get consumed apart from if they are handed to someone else, or smashed. This allows the total volume of alcohol consumed to be calculated from the volume of each container [2]; it is also presumed that the containers are as full as possible, the recipes are for ratios only. Secondly, the time frame can be calculated by 8 episodes is equal to 6 months unless a timeline is stated in the episodes themselves (as stated in 'Timescale' below). Additionally, the alcohol consumption can only be calculated starting from Episode 1 of Season 1, so it is assumed that Malory drinks the same units per week on average. Finally, all trivia which is mentioned by Sterling Archer relating to common

frequency of drinks and methods of making cocktails are believed to be true. Assuming that the cocktails that Malory makes are to the same specifications that Sterling Archer makes, this allows for the unit calculations of the drinks to be as accurate as possible to Malory Archer's drinking habits.

Unit calculation

In order to calculate how many units Malory Archer consumed per week over the seasons, a tally was made of the type of drink consumed, number of drinks of each type, and size of container (on screen). If the ABV (alcohol by volume) was stated in the episode (i.e. Brandy (Aine Amagnac 40%)), then this value was used for the calculations. For collated results see table A in the Appendix. The units of each drink of one type of alcohol were then calculated using Equation 1 [3]:

$$units = \frac{ABV \times volume\ of\ container\ (ml)}{1000} \quad (1)$$

In order to calculate the percentage ABV in cocktails, all of the alcoholic and non-alcoholic ingredients had to be accounted for as shown in Equation 2 [4]:

$$ABV_{cocktail} = \left(\frac{(\%ABV_1 \times volume_1) + (\%ABV_2 \times volume_2)}{Total\ volume\ of\ ingredients} \right) \times 100 \quad (2)$$

From these calculations, the units in each cocktail

could be calculated from Equation 1, and the total units consumed shown on screen could be determined.

Timescale

As the TV show Archer has no proper timescale, this had to be estimated based off the clues given in the TV episodes. For instance the time between Ray getting paralysed to being able to walk again was between Season 3 Episodes 1 and 9, and was stated to be six months [5] meaning that eight episodes can correlate to six months. Therefore this estimate can be used for all of the other seasons as well, and should be sufficient to calculate the total length of all of the seasons combined. As Season 1 has 10 episodes and Seasons 2 to 6 all have 13 episodes each, this gives a total number of 75 episodes. Therefore the on screen timescale can be calculated to be for 56.25 months by using six months = eight episodes. This methodology gives a shorter timescale than what is stated in the show - one of the characters (Lana states that Season 5 lasted for approximately 1 year [6]; 13 episodes = 9.75 months based on the assumptions). Therefore when working out the timescale, Season 5 is said to be a year (12 months) instead of 9.75 months to fit with what is stated in the show, whereas all other seasons fit with the timescale calculated (6 months = 8 episodes).

Additionally to this minimum timescale, there are multiple times where the length of events are stated e.g. Archer's cancer treatment course (watching a video every week for 3 months once he was cured [7]) and the age of babies which were born on the show [8]. Therefore by taking these into account, the total time is calculated to be 64.5 months.

Relevance to NIAAA and CSAT recommendations

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) and Center for Substance Abuse Treatment (CSAT) recommended weekly consumption of alcohol for an elderly female is no more than 7 standard drinks per week [9]. This is equivalent to '1.5 oz of 80-proof (40% ABV) distilled spirits'. Therefore, by using Equation 1, this can be calculated to be 1.7 units per standard drink, which gives the recommended weekly unit intake to be roughly 12 units per week (11.933 units per week).

The weekly consumption for Malory can be calculated as the total units divided by the total number of weeks. Assuming that there are 4 weeks per month, the total number of weeks is 258. This gives a total weekly consumption of 8.719 units (1.246 units per day). This does fit within the weekly consumption units per week as stated by the NIAAA and CSAT.

Reliability of the Data

As the Archer TV series mainly follows Sterling Archer rather than his mother Malory, it is likely that the number of drinks on screen is not representative of the amount that she drinks. Therefore it is very likely that Malory drinks more than shown in the TV show on average, as she does not always feature in every episode, or only features for a very short period of time. This means that as the calculated unit consumption is so close to the suggested limit, it is likely that she drinks more than the limit. This hypothesis has more evidence as when Malory is shown to be drinking, it is normally a Scotch or whisky, which holds 11 units, almost the weekly allowance in one drink. Furthermore, Malory typically pours substantially more alcohol in these glasses than the 'typical' amount of alcohol poured for such a high ABV. Therefore it can be suggested that Malory does drink more than the guidelines set up by the NIAAA and CSAT, and the calculated values are lower than expected.

Conclusion

It can be seen that Malory Archer's screen time drinking gives an average unit consumption of 8.719 units per week, meaning that it does fit within the guidelines set by the NIAAA and CSAT for an elderly woman's weekly consumption of alcohol. However, given the fact that Malory is not shown as much in the TV show for reliable calculations of the unit intake, it is very likely that she does drink more than the NIAAA and CSAT limits based on basic observations.

References

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Appendix

Type of Alcohol	Number of Drinks	Type of Glass	Content (ml) [11]	Total Liquid Consumed (ml)	ABV %	Total Units per Drink
Scotch (43% ABV)	120	Old Fashioned	255.72	30686.16	43.0	1319.50
Tom Collins [12]	6	Collins	397.78	2386.70	16.0	38.19
Martini [12]	12	Martini	227.31	2727.66	32.5	88.52
Bloody Mary [12]	12	High Ball	284.13	3409.57	12.2	41.43
Red Wine	5	Red Wine Glass	227.31	1136.53	14.0	15.91
Hurricane [13]	1	Collins	397.78	397.78	17.8	7.07
Gin	1	Half Gallon	2273.05	2273.05	40.0	90.92
Absinthe	1.5	Bottle	750.00	1125.00	68.0	76.50
Green Russian [12]	1	Collins	397.78	397.78	34.6	13.75
Absinthe	4	Shot Glass	42.62	170.48	68.0	11.59
Hip Flask of Bourbon	3	Hip Flask	227.31	681.92	40.0	27.28
Brandy (Aine Amagnac 40%)	4	Brandy Glass	170.48	681.91	40.0	27.28
Champagne	10	Champagne Flute	170.48	1704.78	12.0	20.46
Mimosa [13]	1	Champagne Flute	170.48	170.48	6.0	1.02
Vodka	0.50	Mason Jar	454.61	227.30	40.5	9.21
Ethanol (in a lab)	1	Measuring Cylinder	70.00	70.00	100 [14]	7.00
Isopropyl (medical grade)	3	16fl oz container	454.61	1363.83	70.0	95.47
Bourbon	14	Old Fashioned	255.72	3068.62	40.0	122.74
Rum	1	Old Fashioned	255.72	255.72	40.0	10.23
Port	1	Sherry Glass	56.83	56.83	20.0	1.14
Brandy (Aine Amagnac 40%)	2	Bottle (700 cl) [15]	700.00	1400.00	40.0	56.00
Scotch (43% ABV)	1	Bottle	750.00	750.00	43.0	32.25
Kentucky Moon	1	Mason Jar	454.61	454.61	96.0	43.64
Kentucky Moon and Peach Juice	4	Mug	350.00	1400.00	48.0	67.20
Irish Coffee	9	Mug	350.00	3150.00	8.0	25.20
				Total Number of Units Consumed		2249.50

Table A) A table showing the different types of drink and unit consumption for each one that Malory Archer drinks during screen time from Seasons 1 to 6. All ABV calculations are taken from on screen recommendations where possible [10]. The ml content of the drinks has been converted from fluid ounces (as Archer is an American TV show, American glass sizes have been used [11]). Cocktail ABV calculations have been carried out from the recipes stated by Archer's book [12] or the Archer Wiki [13] where applicable.