# PREVALENCE OF ALCOHOL CONSUMPTION AND ITS PATTERN OF USE IN AN URBAN AREA OF KANCHEEPURAM DISTRICT, TAMILNADU

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## ABSTRACT

Alcohol consumption policies and laws differ across various States within the country, it is important to find out the prevalence and burden of alcohol consumption in various States and within the States of the country. This is a community based cross sectional descriptive study done in Anakaputhur, an urban area ofKancheepuram district, Tamil Nadu. . Persons who indulge in alcohol consumption were more prone to develop health problems like hypertension, gastrointestinal problems and psychiatric illnesses and the associations between these health problems and alcohol consumption were found to be statistically significant.

## Introduction

Alcohol is a psychoactive substance with dependence producing properties and is produced by the fermentation of yeast, sugars and starch, typically taken in the form of an alcoholic beverage. It is an ingredient found in beer, wine, brandy, whiskey and rum in the form of ethanol or ethyl alcohol. Ingestion of these in sufficient quantities can lead to a state known as alcohol intoxication or drunkenness (1). It mainly acts on the central nervous system, but also acts on all the systems of the body. It enter s the bloodstream and reaches the brain and i t only takes a few minutes for it to act upon it. The primary organ which metabolizes alcohol to acetaldehyde is the liver. It takes around one hour for the liver, to completely digest a standard alcoholic drink . (2). In Indian context, one standard alcoholic beverage equals 10 grams of absolute alcohol. (3) Recorded alcohol is alcohol consumed as a beverage that is recorded in official statistics, such as data on alcohol taxation or sales. The level of alcohol consumption is globally measured by an indicator known as Alcohol Per Capita Consumption (APC). It is defined as the capita amount of alcohol consumed in litres of pure alcohol in a given population. According to reports by WHO, the average total per capita consumption of alcohol (Recorded alcohol use) among individuals above 15 years of age is around 6.2 litres of pure alcohol per year which is equal to 13.5 grams of pure alcohol consumed per day. This varies widely around the World, with the highest consumption among developed countries like Europe and America (>12 .5 litres) and the lowest consumption among South East Asia regions (<2.5 litres). Though India has a low per capita consumption of alcohol ( 2.5 – 4.9 litres), unrecorded alcohol use is found to be on the higher side. Unrecorded alcohol refers to t he alcohol that is not taxed in the country where i t is produced and consumed because; it is sold and distributed outside the formal channels under government control. Unrecorded alcohol use is high among the Indian population because home-made spirits constitute a higher proportion of total alcohol consumed, which does not get included in the official statistics. (4-6)

According to WHO, 3.3 million or 5. 9% of all global deaths were attributable to harmful use of alcohol, among which 6. 2% of deaths were attributable for men and 1.1% was attributable for women. According to WHO, alcohol use has contributed to more than 200 diseases which

includes, alcohol dependence, cancers, liver cirrhosis and injuries. In 2012, Alcohol consumption contributed to 5.1 % of total burden of the disease worldwide. (6)

Besides the direct effects of intoxication and addiction, alcohol is estimated to cause about 20 - 30 per cent of each of the following worldwide: oesophageal cancer, liver cancer, and cirrhosis of the liver, homicide, epilepsy and motor vehicle accidents. (7,8)

In Tamil Nadu, legal age for consumption of alcohol is 21 years of age. Tamil Nadu State Marketing Corporation ( TASMAC) is responsible for the wholesale distribution and sale of alcoholic beverages. Various alcohol prohibition laws have been implemented since 1971, which was removed by successive elected political parties. Rather than imposing ban or imposing laws governing alcohol use, political leaders were more concerned about the closure of liquor shops, which has been in practice over the past couple of years. Whenever prohibition of alcohol use has been implemented, the i llegal use of liquor in the form of arrack or toddy goes on the rise, leading to increase in mortality which ultimately results in the ban being lifted. (9-11)

## MATERIALS AND METHODS

**Study design:**
This is a community based cross sectional descriptive study done in Anakaputhur, an urban area ofKancheepuram district, Tamil Nadu.

**Study area:**
Kancheepuram district is one among the 32 Districts of Tamil Nadu. According to the census of India 2011, Kanchipuram district covers an area of 4433Sq. km. The population of Kancheepuram District is 39 .98 lakhs comprising of 20. 12 lakh males and 19.8 lakh females Kancheepuram, the temple town is the headquarters of the district. For administrative reasons, the district has been divided into 4 revenue divisions comprising of 11 taluks with 1137 revenue villages.

Anakaputhur is a Municipality city in the district ofKancheepuram, Tamil Nadu. It is divided into 18 wards for which elections are held every 5 years. (60) The study was conducted in Anakaputhur which is the urban field practicing area of Department of Community Medicine of SreeBalaji Medical College and Hospital (SBMCH), located at a distance of 7 Kilometres from the institution with an area covering approximately 16 square kilometres. (Annexure II)

**Study Period:**
The study was carried out between the period of February 2016 and July 2017.

**Study tool:**
A semi structured pretested questionnaire was used as a study tool to interview the study participants. The questionnaire was prepared in English. It was conducted by face to face interview by the investigator himself and the res ponses were recorded in the questionnaire.

**Ethical Approval:**
The study was approved by Institutional Ethics Committee of SreeBalaji Medical College and Hospital. Ref No: 002/SBMC/ IHEC/2016/196 (Annexure I)

**Inclusion Criteria:**
The inclusion criteria was, adult males aged above 18 years of age, residing for a minimum period of 1 year in Anakaputhur and should give informed consent voluntarily.

**Exclusion criteria:**
Those who were not willing to participate in the study were excluded. Males below 18 years of age were excluded from the study.

**Data collection method and period:**
Data was collected by face to face interview among the study participant in their respective homes. After getting the informed consent, participant was interviewed after building rapport with him. Each interview lasted for a period of 15 to 20 minutes. Data was collected for a period of four months from February 2016 to May 2016.

## RESULTS

Table 1 shows the socio- demographic details of the study participants. Among the study participants, nearly 162 (40. 5%) of them belonged to the age group of 31 - 45 years followed by 104 (26%) of them belonged to the age group of less than 30 years and only 40 (10 %) of them belonged to the age group of above 60 years. Around 123 (30.8 %) of the participants had an education up to higher secondary school, 115 (28.8%) of them were graduates and 64 (16%) of them were illiterate. Majority, 136 (34%) of the study participants were skilled and semiskilled workers followed by 104 (26%) of them who were unskilled workers and only 13 (3. 3%) of them were unemployed. As per Modified BG Prasad Socio Economic Status classification, 165 (41.3%) of the study participants belonged to lower middle class, 104 (26%) of them belonged to upper middle class and only 63 ( 15.7 %) of them belonged to upper lower class. Among the study participants, majority, 269 (67.3%) of them worked day shift , 34 ( 8.5%) of them worked night shift and 84 (21.1 %) of them worked alternating shifts ( weekly or monthly rotation between day and night shift).

Among the study participants, 269 ( 67.3%) of them were married, 96 (24%) of them were unmarried, 29 (7. 3%) of them were widower and 6 (1 .5 %) of them were divorced/separated. Majority, 255 (46.3 %) of the study participants belonged to Hindu religion, 96 (24%) of them belonged to Muslim religion and 49 ( 12. 3%) of them belonged to Christian religion. Around 185 ( 46. 3%) of the study participants were from nuclear family, 142 (35.5%) were from Joint family and 73 ( 18. 2 %) of them were from a three generation family. Majority, 234 ( 58. 5 %) of the study participants were residing in their own house and 166 ( 41. 5%) of them were residing in a rented house. It was observed that, 258 (64.5%) of the study participants reported consumption of tobacco in some form and 142 ( 35. 5%) of them did not consume tobacco in any form.

**Table 1: Alcohol consumption among study participants**

| S.No | Characteristics | Frequency n = 400 | Percentage |
|------|-----------------|-------------------|------------|
|      |                 |                   |            |

| 1 | Lifetime Abstainer | **140** | **35** |
|---|---|---|---|
| 2 | Current Drinker | **156** | **39** |
| 3 | Former Drinker | **104** | **26** |

**Table 2: Drinking habits among current drinkers**

| S.No | Characteristics | Frequency n = 156 | Percentage |
|---|---|---|---|
| 1 | **Age at initiation of drinking** | | |
| | <20 years | 60 | 38.5 |
| | 20- 29 years | 72 | 46.2 |
| | 30- 39 years | 23 | 14.7 |
| | ≥ 40 years | 1 | 0.6 |
| 2 | **Duration of current pattern of drinking** | | |
| | < 5 years | 37 | 23.7 |
| | 5-10 years | 77 | 49.4 |
| | 10- 20 years | 38 | 24.4 |
| | >20 years | 4 | 2.6 |
| 3 | **Last time had an alcoholic beverage** | | |
| | Within last week | 68 | 43.6 |
| | Within last month | 45 | 28.8 |
| | Within past 6 months | 39 | 25.0 |
| | Within the last year | 4 | 2.6 |
| 4 | **Common time of drinking** | | |
| | Morning/ Afternoon | 6 | 3.8 |
| | Evening/Night | 114 | 73.1 |
| | No specific schedule | 36 | 23.1 |
| 5 | **Usual place of consumption of alcohol** | | |
| | Home | 13 | 8.3 |
| | Friend's home | 41 | 26.3 |
| | Wine shop/ Bar | 96 | 61.5 |
| | Street or open area | 6 | 3.9 |
| 6 | **Do you Require a morning drink to get things going for that day?** | | |
| | Yes | | |
| | No | | |

| 6 | Beedi/Cigarette along with alcohol consumption | | |
| | Yes | 100 | 64.1 |
| | No | 56 | 35.9 |
| 7 | Common source of alcoholic beverages | | |
| | Wine shop ( TASMAC) | 136 | 87.2 |
| | Bar ( attached with Hotels/Restaurant) | 20 | 12.8 |

**Table 3: Pattern of Alcohol use and risk levels of alcohol consumption among current drinkers, using AUDIT.**

| S.No | Characteristic | Frequency n = 156 | Percentage |
|------|----------------|-------------------|------------|
| 1 | **Problem Drinking ( AUDIT Score > 8)** Yes No | 105 51 | 67.3 32.7 |
| 2 | **Drinking Behaviour ( AUDIT)** Hazardous/Harmful drinking (Score 8- 20) Possible Dependent drinking (Score > 20) | 82 23 | 52.5 14.7 |
| 3 | **Risk Level Scoring for intervention ( AUDIT)** Zone 1 (Score 0 -7) Zone 2 (Score 8 -15) Zone 3 (Score 16 - 20) Zone 4 (Score > 20) | 51 39 43 23 | 32.7 25.0 27.6 14.7 |

Current non- drinkers were enquired about the possible reasons for not consuming or stopping alcohol consumption. Among them, 20 .8 % reported that they were not interested in consuming alcohol, 14. 3% told that they did not consume alcohol as they were aware of its harmful effects, 12.3% gave family background as the reason, 5 % reported that they unable to tolerate alcoholic beverages, 4.8% did not consume alcohol based on religious grounds and 4% did not consume due to their economic condition. ( Figure 1)

**Figure 1 : Possible reason for not consuming alcohol/ stopping alcohol consumption as told by study participants**
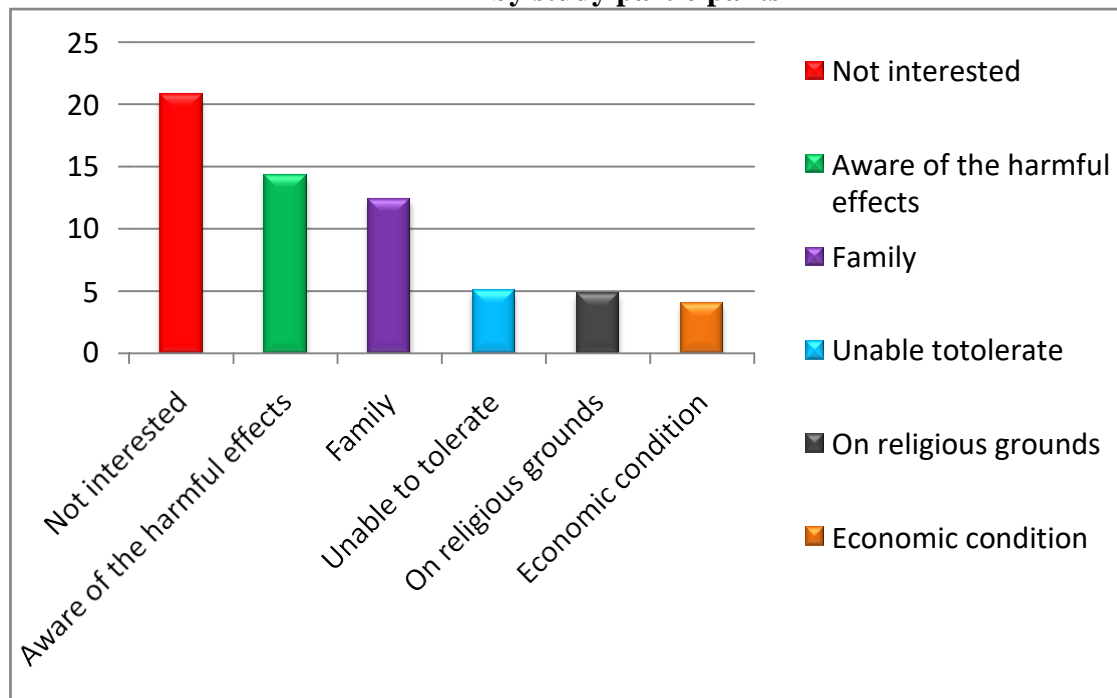


Figure 2 shows the type of alcoholic beverage consumed by the current drinkers. Nearly 58. 3% consumed brandy, 37. 2% of them consumed whiskey, 29.5 % consumed beer, 12. 2% consumed wine and 2. 6% consumed vodka.

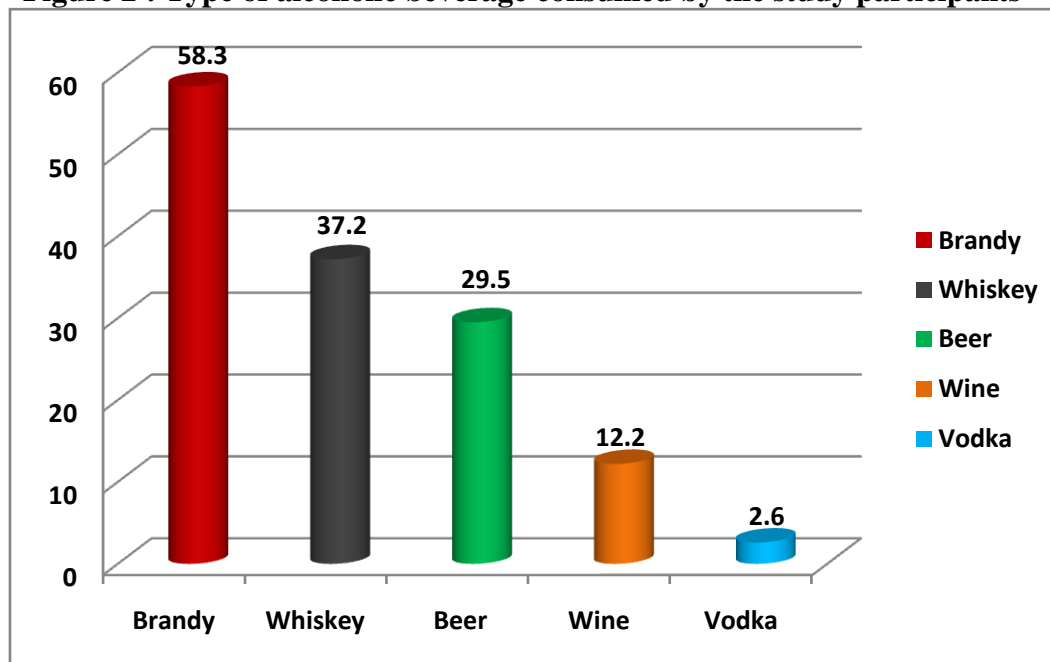**Figure 2 : Type of alcoholic beverage consumed by the study participants**

Figure 4 shows the drinking habits of family members of the study participants . Among the study participants,  33.3%  report ed that their father consumed alcohol, 22% reported that their relatives (Uncle or cousins) consume alcohol and 19.3% reported that their siblings consume alcohol.
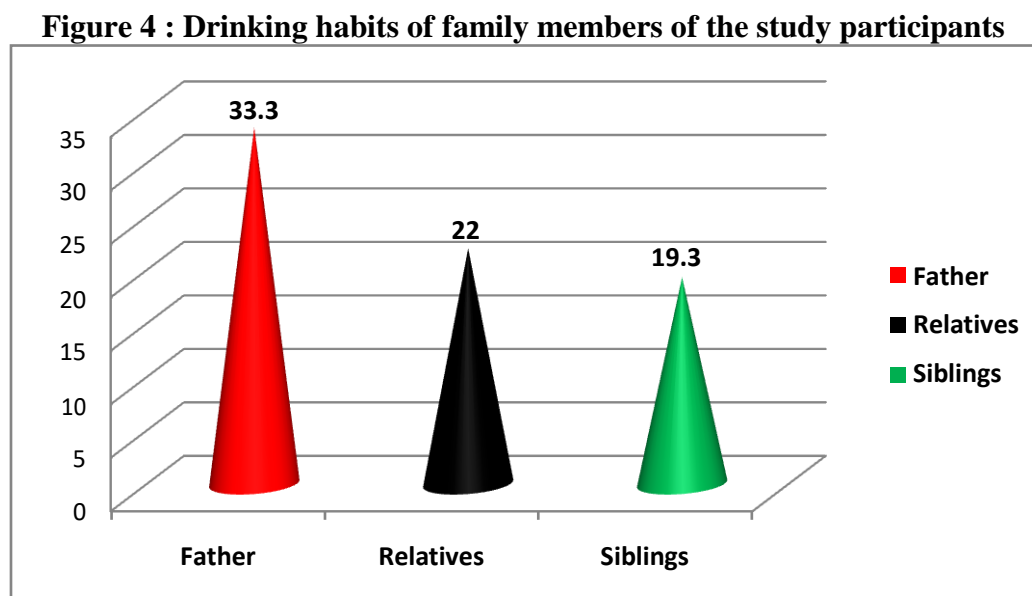
**Figure 4 : Drinking habits of family members of the study participants**



Table 4 shows the association  between  morbidity  of  the study participants with  alcohol consumption. It  was  found  that, 51.4 % of the participants with hypertension were current drinkers when compared with 36 .2% who had  no  diagnosed  hypertension. This association was found to be statistically significant (P<0. 05) with an odd' s ratio of 1.86 ( 95% CI = 1.11 -3. 09). About 59.7% of  the participants who had gastro-intestinal  problems  like  gastritis and peptic ulcer disease were current drinkers when compared with 34.5 % of them. This association was found to be statistically significant (P<0. 05 ) with an odd's ratio of 2. 82 ( 95%  CI =  1.67 - 4.76 ). It was observed that, 83. 3% of those who were getting treated for psychiatric illness like anxiety, depression and psychos is were found to be current drinkers. This association was found to be statistically significant (P<0.05) with an odd' s ratio of  8. 28  ( 95%  CI = 1. 79 -38 .3 ). There was no statistical significant association found between rest of the morbidity like Type 2 Diabetes Mellitus, Cardio-vascular diseases, stroke and musculoskeletal problems and alcohol consumption.

**Table 4 : Various Morbidity and their association with alcohol consumption among study participants.**

| S.No | Morbidity | Total N = 400 | Current Drinkers n=156 | | Chi-square | P Value | OR | 95% CI |
|------|-----------|---------------|----|----|------------|---------|-----|--------|
| | | | n | % | | | | |
| 1 | **Hypertension** | | | | | | | |
| | Yes | 74 | 38 | 51.4 | 5.822 | 0.016* | 1.861 | 1.11-3.09 |
| | No | 326 | 118 | 36.2 | | | | |
| 2 | **Type 2 Diabetes Mellitus** | | | | | | | |
| | Yes | 78 | 34 | 43.6 | 0.858 | 0.354 | 1.267 | 0.76- |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | No | 322 | 122 | 37.9 | | | | 2.09 |
| **Cardio Vascular Diseases** | | | | | | | | |
| 3 | Yes | 39 | 12 | 30.8 | 1.231 | 0.267 | 0.670 | 0.32-1.36 |
| | No | 361 | 144 | 39.9 | | | | |
| **Cerebro Vascular Accidents** | | | | | | | | |
| 4 | Yes | 9 | 2 | 22.2 | 1.089 | 0.297 | 0.440 | 0.09-2.14 |
| | No | 391 | 154 | 39.4 | | | | |
| **Gastrointestinal Diseases** | | | | | | | | |
| 5 | Yes | 72 | 43 | 59.7 | 15.84 | 0.000* | 2.821 | 1.67-4.76 |
| | No | 328 | 113 | 34.5 | | | | |
| **Musculoskeletal Problems** | | | | | | | | |
| 6 | Yes | 48 | 18 | 37.5 | 0.052 | 0.820 | 0.930 | 0.49-1.73 |
| | No | 352 | 138 | 39.2 | | | | |
| **Psychiatric Illness** | | | | | | | | |
| 7 | Yes | 12 | 10 | 83.3 | 10.221 | 0.001* | 8.288 | 1.79-38.3 |
| | No | 388 | 146 | 37.6 | | | | |

* statistically significant at $p < 0.05$

## DISCUSSION

Alcohol consumption is becoming a major health problem worldwide. It is becoming a trend among the youth to indulge in alcohol consumption practices without any specific reasons. People who indulge in alcohol consumption tend to do it as a habit rather than looking at it like an addiction. (12,13)This leads to increased morbidity and mortality among them, as a result of various adverse effects caused due to consumption of alcoholic beverages. The objective of this study was to find out the prevalence of alcohol consumption and its pattern of use among the urban adult population residing in Anakaputhur area of Kancheepuram district, Tamil Nadu. The major findings of this study are discussed here in relation to similar studies elsewhere.

In this study, the prevalence of alcohol consumption among urban adult population was found to be 39% (Current Drinkers). Similar results were obtained in a study done by Lakshmi A et al in a semi urban area of Chennai and by G D'Cost et al in Goa where the prevalence of alcohol consumption among adult population was found to be 42. 65 % and 44.5 respectively. (14-17)

In this study, the prevalence of lifetime alcohol abstinence was found to be 35%. Similar results were obtained in a study conducted by K VidhuKumar et al and Lakshmi A et al where the prevalence of lifetime alcohol abstinence was found to be 31.22% and 32. 35% respectively. (18,19) In this study, former drinkers contributed to 26 % of the study population. In a study by Ghosh S et al, former drinkers were 5.3% and lifetime abstainers were 28.99%.(20)

In this study it was found that, the mean age of initiation of drinking was found to be 24 +4 years. Around 46.2% and 38.5% of the participants initiated their alcohol drinking practice when were in the age group of 20 - 29 years and less than 20 years respectively. The mean duration of current pattern of drinking was 7. 2 + 3. 8 years. Similar results were obtained in a study done by Ghosh S et al, in which it was found that there was early initiation of drinking of alcoholic beverages (less than 20 years) by the study population. (21)

Indian subcontinent is home to diverse religions and cultures across the country. As per Census 2011 data, the major religion in Anakaputhur district was Hinduism (83. 55%), followed by Muslim religion (6.01%). The association between problem drinking and alcohol consumption

even during religious days was found to be statistically significant. This shows that, religions and religious teachings did not play any role in the attitude of the current drinkers due to which, they tend to consume alcoholic beverages even during religious days or it maybe even be attributed to their addiction to alcoholic beverages because of which they were unable to stop consuming in spite of their religious beliefs.(22)

It was observed in this study that, 67.3% of the current drinkers were found to be problem drinkers according to the AUDIT questionnaire. In a study done by Rajeev A et al, 12. 8% of current drinkers were found to be problem drinkers. (23) This variation may have been due to relative difference between the socio - demographic characteristics of study population. (24)

## CONCLUSION

The major risk factors for alcohol consumption were found to be tobacco use, alcohol consumption practices among family members, lack of awareness of health problems caused due to alcohol consumption and having stigma of being a non -drinker. The associations between the above mentioned risk factors and alcohol consumption were also found to be statistically significant (P<0. 05). The major risk factors of problem drinking among the current drinkers were found to be consumption of alcoholic beverages in wine shop and bars, co- existing depression and having quarrels within the family due to their alcohol drinking pattern. Persons who indulge in alcohol consumption were more prone to develop health problems like hypertension, gastrointestinal problems and psychiatric illnesses and the associations between these health problems and alcohol consumption were found to be statistically significant.

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## CONFLICT OF INTEREST

The authors declare no conflict of interest.

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