Estudio EnComCol

Hydration: Quantities, frequency, and beverage typology in Spanish children and adolescents

POLITÉCNICA

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Study

“Hydration: Quantities, frequency, and beverage typology in Spanish children and adolescents”.
(EnComCol: School Canteen Survey)

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Introduction

Hydration is an **essential component** of health and well-being **during childhood and adolescence**. In Europe, **EFSA establishes** adequate water intake recommendations according to age, sex, physiological status, physical activity, and environmental conditions. For children **aged 6 to 11** years, these recommendations range **from 1.9 to 2.1 litres per day**. In adolescents aged **12 to 17 years**, these amounts approach those of adults, ranging **from 2 to 2.5 litres per day**[4].

Within this framework, the study "**Hydration: Quantities, frequency, and beverage typology in Spanish children and adolescents**", conducted within the EnComCol Study, **analyses how beverage consumption is distributed among Spanish children and adolescents** and how it may vary according to school type and school canteen use[1].

Sample

The analysis was carried out using data from the EnComCol study, with a total sample of 1,000 participants aged 6 to 17 years, divided into two groups: 500 children aged 6 to 11 years and 500 adolescents aged 12 to 17 years.

The sample was structured using quotas for age, sex, type of school, school canteen use, dietary record day, and geographical area.

In children aged 6 to 11 years, an additional specific quota was established according to attendance and use of the school canteen.

The territorial distribution included six major areas of Spain: Centre, Northeast, South, Levante, North, and Northwest, in order to ensure statistically representative national coverage[1][2].

Child population
(6-12 years old)

Sample size 500

250
boys

250
girls

Adolescent population
(13-17 years old)

Sample size 500

250 male
adolescents

250 female
adolescents

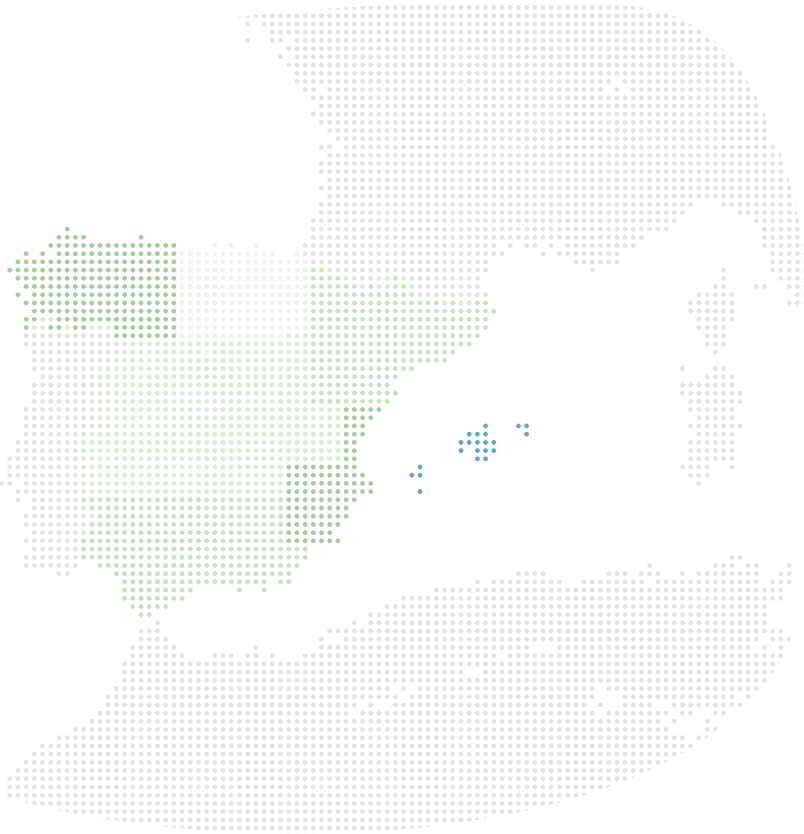
Methodology

The study analysed hydration habits by measuring beverage intake in six Spanish regions and collected information from a representative sample segmented by type of school.

The methodological document complements this design with fieldwork conducted between September 2024 and Dicember 2024, including a prior pilot phase and two main phases of data collection[1][2].

Data collection was organised in four stages: an initial pilot phase to adjust and validate the questionnaires and materials; recruitment and administration of the lifestyle questionnaire through a personal interview assisted by Tablet; completion of the dietary record by participants, supported by explanatory materials; and a second telephone contact, one week later, to collect detailed information on the recorded consumption.

The diary included six eating occasions throughout the day: breakfast, mid-morning snack, lunch, afternoon snack, dinner, and supper[2].



The territorial distribution was structured into six peninsular Nielsen areas, excluding the Canary Islands and grouping the territory into broad geographical and consumption areas: Centre, Northeast, South, Levante, North, and Northwest.

This segmentation allows for a balanced analysis of the distribution, distinguishing between the main markets in central Spain, the Mediterranean corridor, the northern and northwestern regions, as well as the southern area of the country.

Concentrated consumption pattern

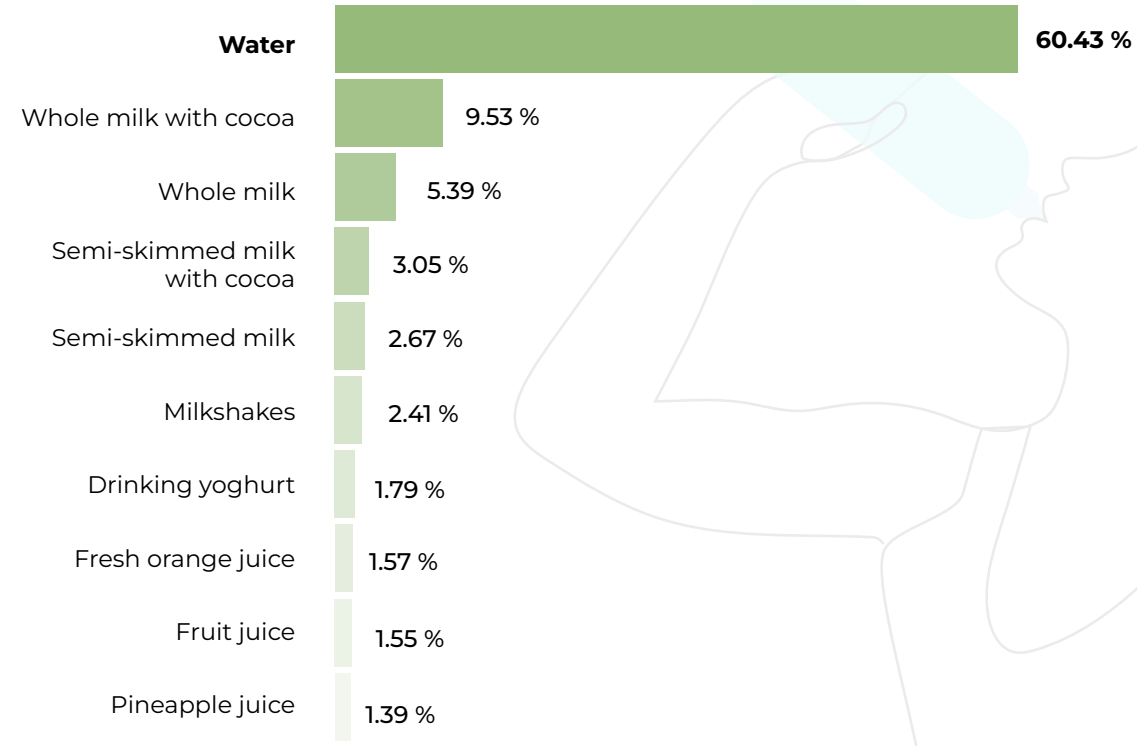
One of the main findings of the study is that, although 5,024 consumptions corresponding to 36 different types of beverages were recorded, current consumption is concentrated in very few options. In fact, the 10 most frequently consumed beverages account for 91.08 % of the total recorded [1].

Within this pattern, **water occupies a clearly dominant position: it accounts for 3,036 records and represents 60.43 % of the total, showing that it constitutes the basis of daily hydration in children and adolescents.**

It is followed by different milk-based and cocoa-based beverages, such as whole milk with cocoa (9.53 %), whole milk (5.39 %), semi-skimmed milk with cocoa (3.05 %), and semi-skimmed milk (2.67 %), suggesting, especially in the case of cocoa-containing beverages, a relevant presence of products with higher energy content.

Milkshakes, drinking yoghurt, and some juices also appear within this main group, although with a lower weight. In other words, the daily hydration of children and adolescents is based on a highly stable and concentrated repertoire, in which a few beverage categories dominate most of the intake, which may indicate a certain uniformity in consumption habits [1].

Top 10 most consumed beverages among children and adolescents in Spain (total sample)



School canteen: a modulating factor

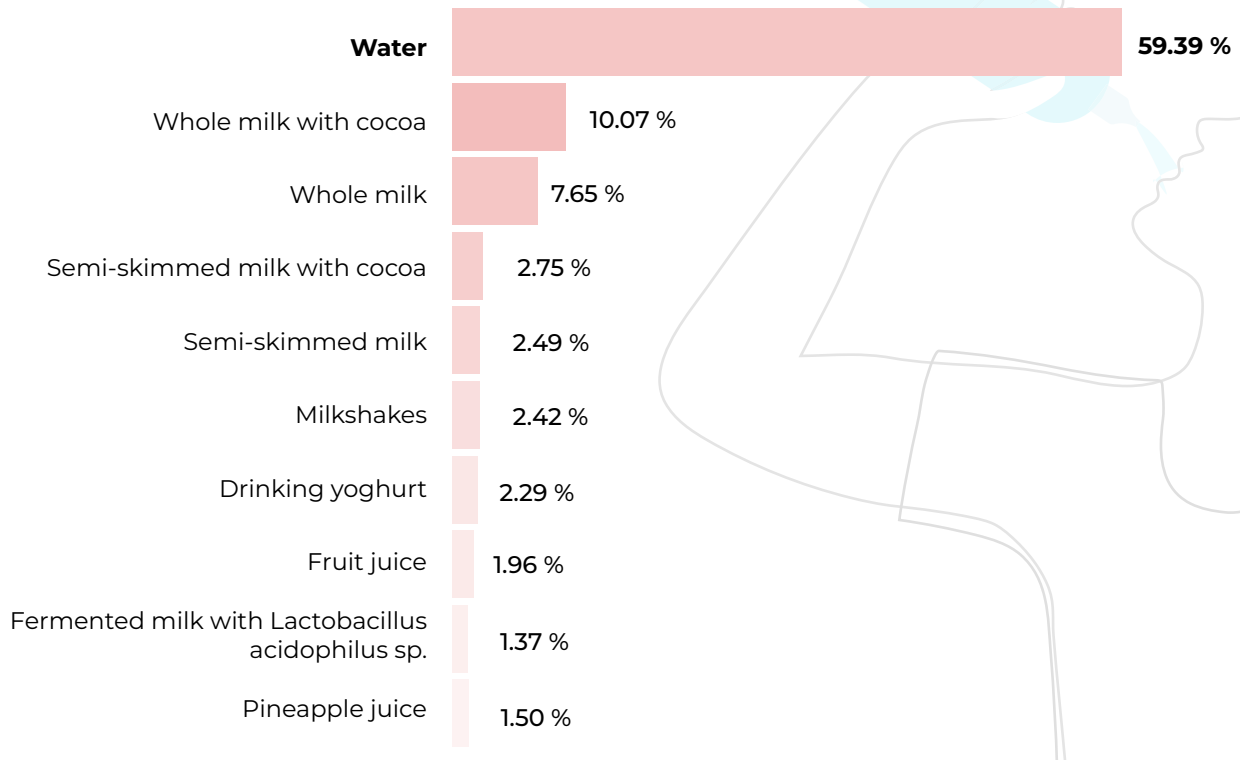
When specifically analysing students who use the school canteen, the pattern remains very similar to that of the overall sample, although slightly more concentrated. In this group, 1,529 consumptions were recorded and the 10 most frequent beverages represented 93.26 % of the total. This indicates a high degree of standardisation in consumption options within this context.

Here again, water is the main beverage, with 908 records and 59.39 % of the total. This reinforces its central role in daily hydration and may be considered a positive result from a nutritional point of view. After water, milk-based beverages stand out, such as whole milk with cocoa (10.07 %), whole milk (7.65 %), semi-skimmed milk with cocoa (2.75 %), and semi-skimmed milk (2.49 %), showing a relevant presence of these beverages, including those with higher energy content.

The remaining beverages have a clearly lower weight, with some variations in the final positions of the ranking compared with the total sample, indicating a consumption pattern concentrated in a small number of categories.

Overall, the general repertoire hardly changes compared with the total sample. Even so, the school canteen seems to reinforce a more homogeneous consumption pattern, concentrated in an even smaller number of beverages[1].

Top 10 most consumed beverages among children and adolescents who use the school canteen (total sample)



Nutritional and educational implications

The results reinforce the importance of continuing to promote nutritional education regarding adequate water intake and daily beverage consumption during childhood and adolescence, always in accordance with the European recommendations proposed by EFSA[1].

At these stages, hydration habits are being consolidated and may influence not only immediate well-being, but also the development of healthier consumption patterns in the medium and long term.

The fact that more than 90 % of consumption is concentrated in only 10 beverages indicates that there is a very clearly defined core of hydration habits among children and adolescents. This concentration makes it easier to identify the beverages that account for most daily consumption and, therefore, where information and educational initiatives are likely to have the greatest impact. At the same time, the remaining consumption, although representing a smaller proportion, includes less frequent, more heterogeneous options and is potentially more sensitive to specific interventions.

These data highlight the need to develop educational strategies adapted to the characteristics of each population group, taking into account variables such as age group, type of school, and time of day at which consumption takes place. In this regard, the school environment appears to be a particularly relevant setting, since it can help structure routines, facilitate access to reliable information, and promote choices that are more consistent with hydration recommendations[1].

In addition, addressing beverage education from a practical and contextualised perspective may help make messages more understandable and useful for children, adolescents, families, and schools. It is not only about conveying general recommendations, but also about supporting day-to-day decision-making by promoting adequate hydration habits within a balanced dietary pattern.

Key conclusions

1

Hydration patterns of Spanish children and adolescents are based on a highly concentrated beverage repertoire: 10 options account for more than 90 % of the total recorded consumption.

2

Water is by far the most consumed beverage both in the total sample and among those who use the school canteen.

3

After water, the consumption pattern is built mainly on milk-based beverages, cocoa-based beverages, milkshakes, drinking yoghurt, and some juices.

4

The use of the school canteen does not substantially change the overall beverage ranking, but it does appear to reinforce a more concentrated and homogeneous pattern.

5

The school environment may play a relevant role as a modulator of hydration habits, especially from an educational perspective.

6

Nutritional education on adequate hydration habits remains a priority, and actions should be tailored according to age, type of school, and time of day.

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