

Consumers Awareness, Knowledge and Consumption of Artificial Sweeteners

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Background

Artificial Sweeteners (AS) have become increasingly popular as a replacement for sugar in food products to lower the energy in many foods, including drinks, sweets and some reduced fat items, such as yoghurt (Diabetes.uk., 2018). AS are regulated and tested to ensure they are safe to consume (EFSA, 2017) but they can be viewed as harmful and unhealthy by the general public. Media and advertising have a significant part to play in consumers' opinions and knowledge which affects consumption (NCBI, 2017). This study aimed to investigate the knowledge, awareness and consumption of AS in the general public, using a questionnaire distributed to a group of participants of all ages over 18 years. This type of research, investigating the public's knowledge and consumption of AS exclusively, is not currently widely studied. However, the results reveal an area of confusion and misinformation which may be addressed and publicised correctly by public health incentives promoting clear messages. This opens an area for further projects and research for dietitians, especially in the current climate as AS consumption has increased with the introduction of the sugar tax (INDI, 2018).

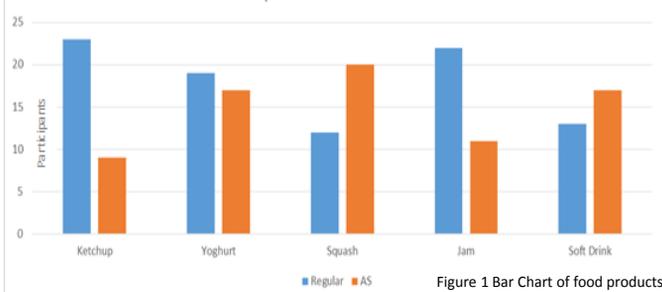
Methods

In total 40 questionnaires were distributed using opportunistic sampling and were completed by 10 males and 30 females all over the age of 18 years; the response rate was 100%. The cohort was representative of the general public as this was the targeted population. Ethics approval was granted from Cardiff Metropolitan University prior to the research and data collection. Qualitative and quantitative data were analysed and findings were tested for significance using SPSS.

Results

The data collected consisted of both qualitative and quantitative answers. Just under half of participants had a leaving certificate only (GCSE equivalent) and one third of the cohort had third level education. 40% of participants said they do consume AS, whereas 37% said they did not. In the multiple-choice questions participants were shown images of different food products: one option with no AS and the other option contained AS. The full sugar options were proven more popular in all options apart from soft drinks and squash (see bar chart below). The majority of the cohort N=33 stated that they would prefer to choose the sugar sweetened products.

Multiple Choice Food Questions



When asked if the participants would give artificial sweeteners to their children only one said yes. Just 15 participants were confident that they could identify AS on food labels. When requested to list any known AS, 22 said they could name some. Qualitative answers were analysed quantitatively, using a grading system; this revealed that 24% of the questions were answered displaying accurate knowledge of AS. Over half of the participants said they either did not know of the health consequences or did not think there are any. 35 stated that they felt AS are harmful to health but this was not reflected in their consumption (see figure 2). There was a very diverse range of qualitative answers displaying mixed and ill-informed opinions (see figure 2).

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|------|--|
| Q7. | -I eat AS only because they are in the products I consume. -I don't know enough about AS. I need to be educated more about the subject and know what to look out for. |
| Q16. | -Saw on tv AS being carcinogenic and think sugar is fine in moderation. -I know diabetics take it as an alternative to natural sugar but don't know how healthy they are. -Not healthy because they are not natural. - To reduce weight. |
| Q18. | -Less sugar in the diet is a good thing. -Not really just maybe for diabetics. |
| Q19. | -I do believe there are negative consequences but do not know what they are. - cancer -T2DM -weight gain -diarrhoea - stomach cramps. |

Figure 2 Table of Comments

Discussion and Conclusion

Results revealed evident confusion in the participants regarding AS consumption. For example, the well-established health benefits such as preventing dental caries was not well known and the poorly researched negative claims towards AS seem a top concern for the participants.

The results of the study are presented under three headings:

Awareness of AS containing foods

It is clear from the comparison of questions investigating the known consumption of AS and the multiple-choice questions that the majority of the cohort did not know which foods contain AS. Only four participants stated that they consciously choose artificial sweetener instead of sugar, however the majority of participants chose a food product containing AS. Furthermore 37.5% (N=15) of the cohort could identify AS on food labels. Additionally, the question to examine other foods known to have AS was only answered correctly by 13 participants. It is evident the awareness of AS in food products is poor among this cohort.

Knowledge

The participants' poor knowledge of AS was apparent from the results of the questionnaire. Only ¼ of the qualitative questions were answered showing an accurate knowledge of AS according to guidelines. Females had more knowledge of AS containing foods as the responses for question seven were mainly from females. Additionally, only 2.5% of the 25% of correct answers in the qualitative questions were from males. In the qualitative data the main impression the participants seem to have about AS consumption is negative. In total 29 comments indicated that the majority of the participants think it is harmful to consume AS, 35 stated they are not healthy. Only ¼ of participants stated any health benefits and out of these only one mentioned dental health.

AS consumption by participants V Opinion on Healthy option

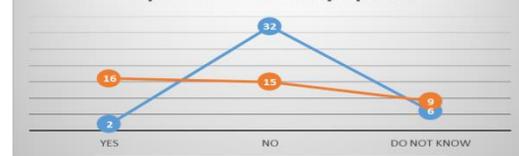


Figure 3 Consumption V health

Consumption of AS

It is interesting to note that 11 participants in the cohort answered question seven revealing they only consume AS because it is in the foods they like to eat and not because they would like to choose AS over sugar. One participant stated it is difficult to avoid them, showing that the consumption of AS is not always optional and consumers may feel a loss of control in the food products. Moreover it was displayed that even though 87.5% of participants stated that AS is not a health option 42% still consume AS, as shown in graph two. There was no difference in consumption between age groups, education levels or sex, as no significance was shown in statistical tests.

Conclusion

In conclusion, there needs to be more clear and direct information published on AS, stating the facts from reputable peer reviewed research papers to diminish public's confusion on AS consumption and empower their decisions using education. This is particularly important as the range of food products containing AS has increased with the sugar tax (NDI, 2018). Also, more research into why people are choosing AS in food products and their consumption of AS should also be investigated in order to better understand consumers' behaviour.



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