Alcohol Alert - October 18, 2022

New Algorithm Can Identify Images of Alcohol in Electronic Media; Potential Tool to Limit Online Exposure to Alcohol Marketing

Newswise — A new algorithm has been found to identify images of alcohol in electronic media with a high degree of accuracy. Possible applications for this algorithm include public health research to quantify exposure to images of alcohol and mobile or web applications to allow individuals to filter unwanted exposure to online alcohol advertising or alcohol-related content. The development and testing of the algorithm are described in a paper published in the October issue of Alcoholism: Clinical & Experimental Research. The algorithm has been made publicly available at no charge.

Exposure to alcohol images and marketing online has been associated with harmful effects in children and adults, such as increasing alcohol consumption, binge or dangerous drinking, and initiation of drinking among nondrinkers. Alcohol brands use images in social media to promote their products, as images tend to get higher levels of engagement than other types of social media posts.

ABIDLA2, the Alcoholic Beverage Identification Deep Learning Algorithm Version 2, accurately screens for images of alcohol in electronic media with approximately 90% accuracy. The researchers used 191,000 images from Google and Bing search results to "train" the algorithm to discern between images of alcoholic beverages and other images. In addition, the algorithm can identify specific categories of alcoholic drinks in the images, including beer and cider in cups, bottles and cans, wine, champagne, cocktails, whiskey, cognac and brandy, with an overall accuracy rate of 77%. Accuracy varied by category, from a high of 88% accuracy for images of whiskey/cognac/brandy to a low of 65% accuracy for champagne. Wine and beer/ cider cans and bottles were correctly identified 78 to 80% of the time. The lowest accuracy rate, 65% for champagne, was still five times higher than random chance identification.

The algorithm developers describe possible strategies to improve classification accuracy for champagne and cocktails, the categories with relatively lower accuracy, and to identify more than one beverage per image—ABIDLA2 only identifies the most prominent beverage. ABIDLA 2 is more accurate and identifies more categories of alcohol in more contexts than ABIDLA, the original version of the algorithm.

The developers indicate this free, publicly available algorithm may be used on any kind of electronic media, including both image and video content on Facebook, Twitter, Instagram, and YouTube. With 4.6 billion active social media users worldwide, this algorithm can be an important tool for researchers and public health practitioners to quantify exposure to alcohol images. The algorithm could also be used to develop mobile applications or web browser plugins to allow parents or people with substance use disorders to limit exposure to alcohol-related content online. Development and validation of the Alcoholic Beverage Identification Deep Learning Algorithm Version 2 (ABIDLA2) for quantifying alcohol images. A. Bonela, Z. He, T. Norman, E. Kuntsche. (pp xxx)ACER-21-5122.R2 **Read**

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