

ChatGPT a promising learning tool? An exploratory conversation on food labels [†]

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[†] Presented at the 6th International Congress of CIEM—Immediate and Future Challenges to Foster One Health, Almada, 5–7 July 2023.

ChatGPT, a generative pre-trained transformer chatbot developed by OpenAI, was launched in november 30th, 2022. This large language model based on Artificial Intelligence (AI) can understand and generate human-like responses using a text-based interface. In six months only, ChatGPT has received great attention by the medical and health sciences communities, including nutrition and pharmaceutical. One of the potential values of this chatbot is to assist students in their education, as the free application is easily accessible to the general public. However, the limitations of this AI-based tool are quite unknown. The information of the food label is crucial for consumers, since it could be used for their choices. It is also a valuable tool from the Public Health point of view, to monitor-preferences and consumption and to promote healthy lifestyles and nutrition worldwide. Here we aimed to evaluate the accuracy and the completeness of ChatGPT in answering questions regarding knowledge and skills on food labelling regulatory compliance, Nutri-scores validation, nutritional food decoder use and nutritional food recommendations for infants and young children, aged between 0 and 36 months; ChatGPT generated answers to 13 questions regarding the themes mentioned above were evaluated by a student and their supervisors (S1 and S2 with greater expertise in food law and public health, respectively) graded for accuracy and completeness (5 point rating scale: 1-not at all; 2-slightly; 3-moderately; 4-very; 5-extremely and complete with additional information) and the scores summarized by descriptive statistics; The student accuracy median score and the interquartile range (IQR) for all ChatGPT answers reviews were 4 (4-5), respectively, and the corresponding supervisors values were 3 (2-5) (S1) and 4 (3-5) (S2); the student median completeness score and IQR values were similar to the accuracy ones 4 (3-5) and their supervisors values were 3 (2-4) (S1) and 4 (3-4) (S2). The food Portuguese law answers (6/13, 46%) had the lowest median scores, ranging 3 to 4 (IQR 2-3 to 3-4; min. 1- max. 5) for accuracy and 2 to 3 (IQR 1-2 to 3-4; min. 1- max. 5) for completeness. The overall accuracy evaluation was good (median - 4; IQR 3-5) but the completeness was more a fair (median - 3; IQR 3-4) as ChatGPT answers don't include references. These results showed that the free version of ChatGPT has limitations accessing information in Portuguese and from images; and our study suggests that ChatGPT is a useful tool for guidance and interpretation of food labels. This chatbot seems to be very interesting in learning, especially in an initial phase, if the information provided is verified. However, it still needs to be improved because it has a wide range of topics that are important for different science and fields and research applications. Moreover, it is practical and friendly for application in Public Health studies and education.

Keywords: food labelling; ChatGPT; regulatory compliance; Nutri-score; nutrition food decoder; infants and young children, food recommendations