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A IMPORTÂNCIA DA DIVULGAÇÃO DE INFORMAÇÕES SOBRE A SÍNDROME DE DOWN NA ERA DA INTELIGÊNCIA ARTIFICIAL

THE IMPORTANCE OF DISSEMINATING INFORMATION ON DOWN SYNDROME IN THE ERA OF ARTIFICIAL INTELLIGENCE

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Resumo

Este artigo tem como foco investigar como o uso de chatbots e plataformas digitais alimentadas por Inteligência Artificial impacta o compartilhamento e disseminação de informações sobre a Síndrome de Down entre familiares, educadores e profissionais de saúde. Observa-se neste contexto que as pessoas tendem a incorporar buscas de informações em suas rotinas diárias sem necessariamente verificar a exatidão e confiabilidade das informações fornecidas pela IA. Isto pode potencialmente levar à disseminação de informações falsas, incorretas ou imprecisas em diversas plataformas digitais. Dados os potenciais benefícios e riscos associados à IA, a presença de informações incorretas nos resultados da pesquisa pode ter implicações negativas para os envolvidos no cuidado de indivíduos com Síndrome de Down. A metodologia de pesquisa utilizada para este estudo incluiu uma revisão de literatura e entrevistas com diversas pessoas envolvidas no cuidado de pessoas com Síndrome de Down.

O objetivo foi capacitar os indivíduos com Síndrome de Down nas suas atividades cotidianas, garantindo que recebam informações precisas e confiáveis, oferecendo estímulos adequados, fundamentais para o pleno desenvolvimento de suas habilidades. A pesquisa qualitativa revelou que profissionais de saúde, educadores e familiares demonstraram falta de conhecimento sobre a plataforma ChatGPT, indicando uma lacuna de conhecimento entre os entrevistados.

Palavras-chave: IA, Inteligência Artificial, ChatGPT, Síndrome de Down, informação falsa.

Abstract

This article focuses on investigating how the use of chatbots and digital platforms powered by Artificial Intelligence impacts the sharing and dissemination of information about Down Syndrome among family members, educators, and health professionals. It is observed in this context people tend to incorporate information searches into their daily routines without necessarily verifying the accuracy and reliability of the information provided by AI. This can potentially lead to the dissemination of fake, incorrect, or inaccurate information on various digital platforms. Given the potential benefits and risks associated with AI, the presence of incorrect information from search results can have negative implications for those involved in the care of individuals with Down Syndrome. The research methodology used for this study included a literature review and interviews with several people involved in the care of people with Down Syndrome. The aim was to empower individuals with Down Syndrome in their day-to-day activities by ensuring they receive accurate and reliable information, offering proper stimulation fundamental for the full development of their abilities. Qualitative research revealed that health professionals, educators, and family members exhibited a lack of awareness about the ChatGPT platform, indicating a knowledge gap among the respondents.

Keywords: AI, Artificial Intelligence, ChatGPT, Down Syndrome, fake information.

Introduction

Information technology (IT) is incorporated into our daily activities, including searching for information on the internet, which people use to access information quickly. Digital platforms have become a means of disseminating information, but they do not always provide safe or reliable sources. In this context, we have new platforms like CHATGPT that use AI to search for information on Down syndrome, taking into consideration the possibility of using such platforms for this purpose.

Nowadays, digital technology brings an endless flow of information and directly impacts people's way of life, work relationships, and interpersonal relationships. Each day, this influence increases and becomes even more complex (Grisoldi, 2023).

The aim of this research is to understand how information is disseminated on this type of platform, targeting a specific audience that seeks information on the subject. This audience includes professionals, family members, educators, and others directly or indirectly involved in the care and education of people with Down syndrome.

There is no way to define the quality of information on these digital platforms, and this data must be reliable so that information can be transformed into knowledge. Given the increasing technological advances in recent years, information security has become essential and is based on three pillars for achieving efficiency: "[...] Integrity, availability, and confidentiality are essential for the organization's business operations" (Salviano, 2022).”

However, it is important to emphasize that although technology facilitates the dissemination of information, the lack of reliability can lead to imprecision and insecurity. Therefore, it is essential to verify the source and evaluate its authenticity before sharing it.

The purpose of this article is to investigate how people connected to individuals with Down Syndrome evaluate these types of platforms that provide information on the subject. It is important for families to know how to access necessary information and then address the specific needs (Melo, 2014). This information aims to help and provide knowledge to individuals going through a difficult time.

Considering that knowledge about trisomy is essential for individuals with Down syndrome to become more autonomous adults, stimulation from birth is necessary. Therefore, it is expected that research platforms can contribute in a positive way.

This work comprises several sections, including the literature review, methodology, analysis and results, and conclusion.

Literature Review

2.1 Digital Platforms

In the contemporary world, technology is used in various ways, and it can and should be utilized to add value, expand knowledge, and primarily, disseminate information. Digital platforms are technological tools that enable the connection between users and services. "Platforms, in simple terms, are based on some kind of infrastructure that facilitates the exchange of value between providers and consumers" (Parker et al., 2016 cited in Grisoldi, 2023).

However, the term "digital platform" is still relatively new, as pointed out by Okano et al. (2021), and there is no universally defined concept, as shown in Table 1 below:

Table 1: Definitions and characteristics of digital platforms.

Digital platforms can be defined as software-based external platforms consisting of an extensible codebase that provides core functionality shared by the modules that interact with it and the interfaces through which they interact. Platform applications (executable software part) offer services or systems to the end users.	Tiwana et al. (2010) Ghazawneh e Henridsson (2013)
Another characterization of a digital platform is a socio-technical set that encompasses technical elements (software and hardware), as well as the associated organizational processes and standards	Tilson e outros, (2012).
Digital platforms are “the actions of a network of companies with complementary skills that co-innovate new business models based on information and technology resources.”	Venkatraman et ai. (2014)
A multifaceted digital platform is an organization that creates value by enabling direct communication and interactions between two or more different groups of users.	Hagiu e Wright (2015)
Digital platforms provide a common set of design rules and a digital infrastructure to facilitate exchanges between multiple users who may not have the opportunity to interact otherwise.	Ondrus et al., **(2015)**
The platform is built on service-based principles and architecture, aiming to create a set of services that can be brought together to create applications and workflows	Le Hong et al. (2016)

A digital platform is a digital space where different participants, such as companies or consumers, connect, generate, and exchange value with each other. Examples of digital platforms include social media platforms like Facebook and Instagram, sharing economy platforms like Airbnb and Uber, e-commerce marketplaces like Amazon and Mercado Livre, and streaming services like Netflix, Spotify, and YouTube Music.	Castellani, (2016)
A digital platform is a technology-enabled business model that creates value by facilitating exchanges between two or more interdependent groups. Platforms commonly bring together end users and producers to transact with each other, and they also enable companies to share information for improved collaboration and innovation in new products and services.	Morvan, Hintermann, Vazirani, (2016)
A digital platform is a technology-enabled business model that allows producers and consumers to exchange value.	Mancha et ai. (2018)
On a digital platform, digital economic relationships are built in a transparent network environment. Trust is provided by a social network, which is a crucial factor for the entire system's self-development and requires appropriate implementation of market infrastructure mechanisms.	Kozhevnikov e Korolev (2018)
However, digital platforms are used by various segments to promote the exchange of services and information between people and companies. It is important to emphasize that they must be used ethically and responsibly. In this context, the search for information from reliable sources should be considered, with a focus on the quality of the information.	(Bonollo & Poopuu, 2019)

Source: Okano et al (2021).

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ChatGPT

ChatGPT is an Artificial Intelligence language model trained on a massive corpus of texts, based on generative pre-trained transformers (GPT) created by OpenAI (Roy and Maity, 2023).

Considering it as a new platform, “ChatGPT’s role in the context of digital transformation is undeniable. However, as researchers, we need to carefully identify and evaluate the demands related to it” (Mich, 2023). Artificial Intelligence has developed rapidly in recent years, leading to the creation of chatbots “capable of generating coherent and informative human-like responses to user input” (Lo, 2023).

But it's important to note that there are limitations and risks when using ChatGPT. None of the existing language models can fully understand the meaning of what is being said or comprehend the semantic content of the input. As a result, ChatGPT does not possess consciousness or an understanding of its own statements.

ChatGPT is trained using various datasets and incorporates information from the internet and interactions with users. While it is a multisource system, its output should be considered as a secondary source. However, the challenge lies in the fact that it is not always feasible to access the specific input used by the system, which is crucial for fact-checking activities (Lo, 2023).

2.3 Down Syndrome

Down syndrome is considered the most common genetic abnormality worldwide, regardless of nationality, race, and social class. “It also presents itself in the same manner regardless of the child's gender and can occur in any family, regardless of a history of Down syndrome or other syndromes” (Déa, 2009).

The first clinical description of Down syndrome was made in 1866 by the English pediatrician John Langdon Down, who worked at the John Hopkins Hospital in London. At the hospital, he classified patients with intellectual disabilities based on their phenotype and published a descriptive study. “Down syndrome is clinically presented due to an imbalance in chromosomal constitution, specifically trisomy of chromosome 21, which can occur through simple trisomy, translocation, or mosaicism” (BRASIL, 2013). The presence of an extra copy of chromosome 21 directly influences the physical characteristics, as well as the mental and motor development in individuals with Down syndrome.

Differences among individuals with Down syndrome, both in physical and developmental aspects, result from individual genetic factors, clinical occurrences, nutrition, stimulation, education, family support, and the social and environmental context.

Methodology

The article adopts an approach to investigate how people search for information about Down syndrome, specifically examining their use of digital platforms and the ChatGPT platform for this purpose. A theoretical foundation was established by reviewing relevant literature on digital platforms and Down syndrome.

A descriptive survey was conducted with individuals who work with, care for, or have family members with Down syndrome to understand their information-seeking behavior. The collected data will be analyzed to determine if the ChatGPT platform is utilized for this type of search.

Analysis and Results

The study examined the impact of artificial intelligence on the dissemination and sharing of information on Down syndrome, particularly investigating how this information is obtained on digital platforms that employ artificial intelligence to process searches through chatbots.

As technology advances, distinguishing between false and genuine information becomes increasingly challenging. In the context of AI, verifying information can be even more complex as AI models can generate texts that appear authentic, even if they are not. Based on the responses obtained from the research conducted with the focus group, it is observed that the respondents do not take proper precautions verifying the accuracy and truthfulness of the information provided by Artificial Intelligence.

The survey assessed the respondents' relationship with Down Syndrome in three pre-established categories: family, health professionals, and education professionals. Eleven people participated, including three family members, three health professionals, and five education professionals. The survey highlighted that technology facilitates information searches.

Observing the responses given by individuals who have some involvement with people with Down Syndrome, three respondents have little or no knowledge about the platform, and the majority of participants do not use the ChatGPT platform to search for information. Instead, most of them mentioned relying on other sources such as Google (55% of respondents) and articles (27%), whereas the remaining participants mentioned searching for information from other sources, as stated in Table 2:

Table 2: Locations for information search.

Interviewee	What do you think about information search made through Artificial Intelligence, for example: ChatGPT?	How do you seek information nowadays? How would you rather receive information?

1	It's a great and very important technological discovery, as it provides several benefits to our daily routine.	Google. I'd rather receive information about the research topic in a clear and determined way.
2	I think it's valid, but I'm more interested in direct searches.	Generally from the source, by direct channels.
3	I have a lot of difficulty with the internet. Everything I could go after there I prefer searching elsewhere.	Articles, books, and research.
4	I'm not familiar with this type of search in particular.	On the internet, in articles by trusted authors, in books and courses (both in person and online). As for receiving information, I hope to continue receiving it in the same way I do today: online, from reliable sources, though radio, TV, and in-person (informal conversation, courses, etc).
5	I think it's an amazing way to perform a search.	Google, in a more precise and clear way.
6	I believe AI to be beneficial, but it must be used in a critical way.	Through sites and magazines.
7	Excellent resource, although it's open to any kind of information.	Google, ChatGPT. I'd receive info via an app updated daily.
8	I think it's viable, but we must verify the sources. Since it's still a beta platform, there are plenty of answer mistakes.	Google, articles and chatbots.
9	I have no knowledge about it	I look into official and renowned sites.
10	Excellent information data source.	Google.
11	Interesting and viable, given that it's something promising for a wide range of fields, enabling increasingly oriented and integrated research	Google and another web search tool. I could use any other more unified platform..

Source: Authors (2023).

It is true that when using different platforms for research, there is a concern about the reliability and quality of the information. This is crucial to ensure that knowledge is not compromised.

While ChatGPT is considered a viable means of research, there is a noted bias regarding the need to verify the accuracy of the information. The question “Is there a concern about legislation to supervise this type of information?” highlights the need for reliable research sources. Although ChatGPT is not widely known among the specific public surveyed, the concern about research sources remains present.

Conclusion

ChatGPT is not the most popular platform for research, possibly due to its limited capability to verify the authenticity of the conducted research, which can lead to unreliability. However, it is understood that AI, including ChatGPT, has yet to be extensively explored in research due to its relative novelty. Nevertheless, while the platform can be a viable research tool, it should be used critically, taking into account the importance of verifying the authenticity of the information obtained.

In order to ensure the credibility of information, it is advisable to exercise critical thinking and corroborate findings from multiple credible sources. By triangulating information from reliable and up-to-date sources, a more complete and accurate understanding can be achieved. Therefore, regardless of the online source being used, it is always recommended to verify the authenticity and validity of the information obtained.

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