

Artificial intelligence and the 2024 Esme's Umbrella Medical Student Essay Prize

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Esme's Umbrella is a charity for people with Charles Bonnet syndrome (CBS), helping raise awareness of the condition as well as offering support and advice. All clinical specialties may encounter CBS, so Esme's Umbrella inaugurated a medical student essay prize in 2023 hoping to raise awareness amongst doctors prior to specialisation.

The 2023 Esme's Umbrella medical student essay prize was widely advertised throughout UK medical schools and over 50 essays were submitted from 18 schools. While many of the essays had high standards of scholarship and originality, the judging panel noted several that had the same incorrect information and no reference list, or a reference list with no relation to the points being made. These submissions typically lacked a coherent voice or connecting theme and were presented as a series of factually accurate but tenuously related paragraphs. The panel concluded these essays were largely written by ChatGPT / artificial intelligence (AI) and that, although they might still achieve the aim of raising CBS awareness in early medical training, they fell outside the spirit and intent of an essay prize.

Esme's Umbrella was keen to repeat the essay prize in 2024 but wanted to reduce the impact of AI-generated writing. The charity therefore asked ChatGPT to write an essay entitled: 'Charles Bonnet Syndrome is not a mental illness – so which group of healthcare professionals should be looking after it?' Instead of writing a new essay, the task for the 2024 prize was to critique the AI-generated essay. Regardless of whether AI was used to assist in researching the critique, it was felt this approach would demand a deeper understanding of how CBS interfaces with the NHS and an informed opinion on how best to achieve longer-term care and support.

The charity was impressed with the AI essay which highlighted the need for a multidisciplinary approach to CBS. However, since nothing has yet been published on the roles of different healthcare professions in managing CBS, how professional roles might change as CBS progresses, and differences between healthcare systems in different countries, AI is unable to address these more nuanced issues. Given the increased demands of the essay task, it was expected that there would be fewer medical student entries in 2024 but the charity was pleasantly surprised to receive 31 essays across 14 medical schools. The ChatGPT-generated essay is presented below (1) together with the winning critique by Vanessa Chou (2) from the University of Edinburgh Medical School. Vanessa highlights the importance of a longer-term perspective in the management of CBS and the need for primary care and optometry involvement in the clinical management pathway. It is a view Esme's Umbrella fully endorses.

1. ChatGPT essay

Can you write an essay with title: "Charles Bonnet syndrome is not a mental illness – so which group of healthcare professionals should be looking after it?"

Introduction

Charles Bonnet syndrome (CBS) presents a unique challenge in the realm of healthcare due to its manifestation of visual hallucinations in individuals with visual impairment. While often misunderstood as a form of mental illness, CBS is fundamentally a neurological condition with distinct characteristics. Determining the appropriate group of healthcare professionals to manage CBS is essential for providing comprehensive care that addresses both the visual impairment and associated hallucinations. This essay explores the roles of various healthcare professionals in the care of individuals with

CBS and advocates for a multidisciplinary approach to optimise patient outcomes.

The role of ophthalmologists

Ophthalmologists play a central role in the management of CBS due to their expertise in treating visual impairment and eye-related conditions. As CBS typically occurs in individuals with underlying visual deficits, ophthalmologists are well positioned to diagnose and monitor the progression of CBS alongside the primary ocular pathology. They can prescribe interventions aimed at optimising visual function, such as corrective lenses, magnification aids, or surgical procedures for conditions like macular degeneration. Additionally, ophthalmologists can educate patients about CBS, reassuring them that the hallucinations are a consequence of visual impairment rather than a sign of mental illness.

Collaboration with neurologists

Given the neurological basis of CBS, collaboration with neurologists is crucial for a comprehensive approach to care. Neurologists can provide insights into the underlying neural mechanisms contributing to CBS, leveraging neuroimaging techniques to elucidate structural and functional abnormalities within the visual processing pathways. Their expertise in managing neurological conditions allows them to address any comorbidities or complications arising from CBS, such as seizures or cognitive impairment. By working closely with ophthalmologists, neurologists can ensure that patients receive holistic care that addresses both the visual and neurological aspects of CBS.

Psychological support and counselling

While CBS itself is not a mental illness, the hallucinations it induces can cause significant distress and anxiety in affected

individuals. Psychologists or mental health professionals play a vital role in providing emotional support and counselling to help patients cope with their hallucinations. They can employ cognitive behavioural techniques to reframe negative thought patterns associated with CBS and teach coping strategies to manage hallucinations effectively. Additionally, psychological support can address any underlying psychological factors exacerbating CBS symptoms, such as anxiety or depression, promoting overall wellbeing and quality of life for patients.

Patient education and support groups

Education and support groups tailored specifically for individuals with CBS can

be invaluable resources in navigating the challenges posed by the condition. These groups provide a platform for patients to share their experiences, exchange coping strategies, and receive reassurance from others facing similar challenges. Healthcare professionals, including ophthalmologists, neurologists, and mental health professionals, can play a role in facilitating these support networks, offering expert guidance and resources to empower patients in managing CBS effectively.

Conclusion

In conclusion, CBS requires a multidisciplinary approach to care that involves collaboration among various

healthcare professionals. Ophthalmologists play a central role in addressing the visual aspects of CBS, while neurologists provide insights into its underlying neurological mechanisms. Psychological support and counselling are essential for helping patients cope with the psychological impact of CBS, while patient education and support groups offer valuable resources for navigating the condition. By leveraging the expertise of different healthcare professionals and adopting a holistic approach to care, individuals with CBS can receive comprehensive support tailored to their unique needs, ultimately improving their quality of life and wellbeing.

2. 2024 Esme's Umbrella Medical Student Essay Prize

Winning critique: Vanessa Chou, Edinburgh Medical School.

Introduction

The essay written by ChatGPT outlined the various healthcare professionals who may be involved and highlighted the value of patient groups in managing Charles Bonnet syndrome (CBS). It concluded that a multidisciplinary and holistic approach entailing the collaboration of these professionals is crucial for optimal management. This critique discusses the essay's strengths and weaknesses.

Strengths

The description of the role of ophthalmologists in managing CBS is accurate, specifically how they 'monitor the progression of CBS alongside the primary ocular pathology'. CBS is primarily a complication in individuals with low vision, resulting in visual hallucinations (VH). It occurs following ocular pathology, commonly age-related macular degeneration [1]. Ophthalmologists are most suited to treat the underlying cause by prescribing visual aids, medication, or performing surgery. Improved vision may reduce or even terminate the VHs [2]. Ophthalmologists also provide explanation, reassurance and self-help techniques to help patients navigate a diagnosis of CBS. Thus, ophthalmologists indeed 'play a central role' in managing CBS.

The VHs experienced in patients with CBS can certainly cause 'significant distress and anxiety'. CBS may remain a chronic condition despite ophthalmologists' efforts to improve vision. Although most patients feel impartial to the VHs, some may find them unsettling. Cox et al. studied the adverse outcomes of the condition in a

group of 492 with CBS, in which 32% felt the hallucinations negatively impacted their lives [3]. People who find VHs challenging to cope with may benefit from psychological support, as ChatGPT mentioned. A VH management framework recommended counselling, cognitive behavioural therapy and carer support for particularly distressed individuals or refractive cases [4,5].

Although healthcare professionals are not directly involved in patient education conducted by support groups, these groups are undoubtedly 'invaluable resources' for patients with CBS, which medical staff can help signpost. Patient education and counselling are the most efficacious strategies in CBS management [6]. Studies reported that concerns of an underlying mental health disorder or dementia induce the most stress in patients recently diagnosed with CBS [4,7]. 'Reassuring [patients] that the hallucinations are a consequence of visual impairment rather than a sign of mental illness' is indeed an effective way of alleviating their worries. Patient groups allow patients to share experiences and techniques to reduce the duration of hallucinations. They also provide a social space for isolated patients. Social isolation is associated with an increased frequency of VHs [4]. The sensory deprivation theory, the most widely accepted explanation, hypothesises that a loss of visual stimuli leads to an alteration of excitability in the visual cortex, leading to VHs [8]. Hence, patient groups may indirectly improve CBS symptoms.

Weaknesses

The essay contained some misinformation that needs rectification. Firstly, CBS is a benign condition and does not have any associated complications, such as 'seizures or cognitive impairment'. Secondly, 'anxiety or depression' does not exacerbate CBS

symptoms but is rather potential sequelae of them. Exacerbations of CBS include social isolation, fluctuations in vision, and level of light [4,6,9].

Contrary to the points made in the essay, neurologists may be the least appropriate specialists to manage CBS despite its 'neurological basis'. The underlying pathophysiology has yet to be elucidated, and the efficacy of pharmacological agents remains unclear [10]. Neuroimaging is also usually not indicated, as CBS management tends to be conservative due to its benign nature. As such, neurologists mostly play a minor role in managing CBS.

It is essential to acknowledge the significant role of primary care practitioners, notably opticians, optometrists and general practitioners, which the essay neglected. They arguably play the most pertinent role as they might be the first point of contact when patients present with VHs [11]. Besides, they rule out other causes of VHs by taking a thorough history, performing necessary examinations, ordering tests and making appropriate referrals [8]. Their role in the management of CBS should not be overlooked.

CBS is not uncommon, with an estimation of 1 in 5 patients with low vision having CBS [1]. It can become chronic and persist for years. A study reported that patients who have been chronically hallucinating experienced fewer VHs than those who have just begun [12]. If the patient's eyesight remains unchanged, further ophthalmic intervention is unnecessary. Currently, there is no standard treatment for CBS [8,13,14]. Management should, therefore, be tailored to the patient accordingly. It may be most appropriate with continual follow-up from someone familiar, such as the patient's regular optometrist or GP. Like other chronic conditions, patients with long-standing CBS who have adapted to live with the

condition may not require multidisciplinary management in the long term.

On the other hand, should issues arise, the primary care practitioner could act as the central liaison point, referring the patient to the appropriate team. For example, if a patient with CBS presents with cognitive impairment, a formal cognitive assessment by a psychologist or psychiatrist is warranted [8]. Similarly, if the VHs worsen or change, consideration of pharmacological management under specialist supervision may be required. For example, albeit rare, the VHs can become distressing following a stressful event. A case report described such changes in an 80-year-old female after being caught in a severe bushfire. Since then, her VHs have changed from a harmless elephant to a constant reminder of the terrifying incident [15].

Conclusion

The essay provided a sound overview of the different healthcare professionals, highlighting the importance of ophthalmologists, psychologists, and patient groups in managing CBS. It also identified the significance of a multidisciplinary and holistic approach. Limitations of the essay include a few false claims, no mention of primary care practitioners, and an incorrect description of the role of neurologists.

The optimal management of CBS is holistic and personalised, as there is no one-size-fits-all. It is also multidisciplinary, composed mainly of primary care practitioners and ophthalmologists, with occasional support from psychologists, particularly in newly diagnosed patients. Other specialists, such as neurologists or psychiatrists, are seldom involved. In the long term, multidisciplinary support becomes optional, and thus, primary care practitioners may be the sole healthcare professionals looking after patients with chronic CBS.

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