Reimagining Recovery: Can Generative Artificial Intelligence Support the Treatment of Anorexia Nervosa?

by

Katherine A. Swaney

A capstone submitted in partial fulfillment

of the requirements for the degree of

Master of Counselling (MC)

City University in Canada

Vancouver, BC

October 2025

APPROVED BY

Dr. Sheri Mayhew, Ed.D, M.Ed, R.S.W., Capstone Supervisor, Master of Counselling Faculty

Dr. Bruce Hardy, Ph.D., Faculty Reader, Master of Counselling Faculty

School of Health and Social Sciences

Abstract

Anorexia nervosa (AN) is a life-threatening eating disorder with the highest mortality rate among mental illnesses, yet its treatment remains underfunded and underexplored. This capstone investigates whether generative artificial intelligence (GenAI) can support the treatment of AN, either as a standalone therapeutic modality or as an adjunct to existing approaches. It explores the complexities that contribute to the pathology of AN, and discusses some of the risks associated with this disorder including physical and emotional distress and high rates of suicide. Stigma and other barriers to care are discussed, as well as common therapeutic practices, such as inpatient treatment, cognitive behavioral therapy (CBT), exposure therapy, and externalization. The discussion explores emerging applications of GenAI in psychotherapy, including AI-supported suicide risk detection, virtual reality exposure therapy, and chatbot-assisted interventions, while addressing ethical concerns such as privacy, embedded bias, and safety risks. This paper concludes by proposing pathways for future research that merge GenAI and AN treatment, emphasizing the need for inclusive, accessible, and ethically sound innovations to improve outcomes for individuals with AN.

Keywords: anorexia nervosa, artificial intelligence, eating disorders, treatment

Table of Contents

Abstract 2

Table of Contents 3

Chapter One: Introduction 7

Overview of the Topic 7

Purpose Statement and Audience 8

Research Question 8

Purposeful Exceptions 9

Theoretical and Conceptual Framework 9

Cognitive Behavioural Theory and The Transdiagnostic Theory of Eating Disorders 9

Contribution to the Field 11

Reflectivity and Positionality Statement 12

Social Location 12

Personal Experience with Disordered Eating 13

Professional and Academic Background 14

Definition of Terms 15

Alexithymia 16

Atypical Anorexia Nervosa (AAN) 17

Body Mass Index (BMI) 17

Discriminative Artificial Intelligence (DAI) *17*

Eating Disorders *17*

Generative Artificial Intelligence (GenAI) *18*

Machine Learning (ML) *18*

Natural Language Processing (NLP) *18*

Nutritional Rehabilitation *18*

Therapeutic Alliance *19*

Stigma *19*

Virtual Reality (VR) *19*

Overview of Paper 20

Chapter Two *20*

Chapter Three *20*

Chapter Two: Literature Review 22

A Brief Introduction to Generative Artificial Intelligence 22

The Intersection of GenAI and Anorexia Nervosa *23*

Anorexia Nervosa: Diagnosis and Pathology 24

Critiques and Challenges with the DSM and the Medical Model of AN *24*

Prevalence of AN in Canada *26*

Atypical Anorexia: Not So Atypical *27*

Stigma and Help-Seeking in Anorexia Nervosa *32*

Gender Diversity and Anorexia Nervosa *35*

Suicide Risk and Anorexia Nervosa *40*

Therapeutic Approaches for Anorexia Nervosa 45

Inpatient Treatment for Anorexia Nervosa *45*

Cognitive Behavioural Therapy for the Treatment of Anorexia Nervosa *47*

Exposure Therapy in the Treatment of Anorexia Nervosa *52*

Externalization in Anorexia Nervosa Counselling *58*

Summary 62

Chapter Three 63

Discussion 63

Application: Research Directions and Ethical Guidelines 66

Improving Access to Treatment for AN *66*

GenAI and Inpatient Treatment *69*

GenAI and CBT *71*

GenAI and Exposure Therapy *75*

GenAI Enhanced Externalization for AN *76*

Risks and Ethics 79

Suicide Risk, AN, and Natural Language Processing *79*

Imbedded and Systemic Bias *82*

Privacy *83*

Transference and Countertransference *83*

The Black Box Phenomenon *84*

Recommendations for Regulatory Policies and Ethical Codes *84*

Limitations 87

Summary 89

References 92

Chapter One: Introduction

Artificial intelligence (AI) is rapidly advancing and is increasingly prevalent across various sectors of society, including mental health. While it must be approached with caution and clinical rigor, AI presents may offer promising avenues for supporting individuals with eating disorders such as anorexia nervosa (AN). This paper explores the intersection of AI and the treatment of AN, a connection that remains largely underexplored in the body of literature. This paper will demonstrate how clinical understandings of AN are evolving, and describe how advancements in AI may change the future landscape of treatment and care.

Overview of the Topic

Eating disorders are considered the deadliest mental illness (Stone et al., 2021), and AN is considered to have the highest mortality rate among all eating disorders (Krug et al., 2025). According to a recent meta-analysis that used 31 quantitative studies, people with AN have a mortality rate five times higher than that of the general population (Arcelus et al., 2011; Krug et al., 2025). Those who live with AN are at risk of a host of other health concerns including bone density loss, organ malfunction, reproductive issues, heart rate irregularities (Gaudiani, 2018). Given the significant physiological risks and high mortality rates, including death by suicide, the search for innovative, effective, and efficient treatments remains a critical focus in this field. Unfortunately however, research on eating disorders including anorexia is grossly underfunded in Canada (Raffoul et al., 2025; Stone et al., 2021). In addition, reliable prevalence statistics are limited, and existing data likely underestimate the true scope of the issue (Krug et al., 2025; National Initiative for Eating Disorders, 2024).

While AI may not be well understood by some professionals, its integration into mental health care appears increasingly inevitable as the technology continues to advance (Sharp et al.,

2023). An informed understanding is likely critical to reduce uncertainty and reticence as these advancements continue. This capstone investigates whether generative artificial intelligence (GenAI) could be a useful tool to support the treatment of people with AN. To explore the intersection of these two topics, I have detailed key pathology elements and common treatment approaches for anorexia, highlighted some of the gaps and areas of opportunity, and explored whether AI has been applied in any of these areas. Later, GenAI adaptations are introduced in broader psychotherapeutic settings. In this discussion, I offer ideas for potential pathways to integrate or research the feasibility of using GenAI to support the treatment of AN. Safety, risks, and ethical considerations are discussed throughout, and research and policy recommendations are included in chapter three.

Purpose Statement and Audience

The purpose of this capstone research paper is to evaluate the viability of GenAI as a standalone therapeutic modality or as an adjunct to existing treatments for AN, and to explore the current research climate on these topics. The intended audiences for this paper include counsellors, counselling students, and educators. This paper may be especially interesting to researchers who want to further the body of knowledge on eating disorders and AI. Regulatory bodies could also benefit from the findings presented in this paper, as this information may help in informing decisions for future iterations of ethics and policy documents.

Research Question

The guiding research question for this capstone is: How can generative artificial intelligence support the treatment of anorexia nervosa? To explore this research question, chapter two's literature review will describe the pathology associated with AN and identify some risk factors. Empirically supported treatments will be explored, and gaps and opportunities for

advancement will be highlighted. Relevant innovations in AI will be included as appropriate, and the intersection of these two topics will guide the discussion in chapter three.

Purposeful Exceptions

I have intentionally omitted lengthy discussions about AN and AI in relation to children, defined as individuals under the age of 18 years. While this paper describes some child and youth therapies, it is not intended as a robust exploration of the experience of AN with children, nor is it intended to be a deep dive into the feasibility of various AN therapies for minors. The experience and treatment of AN likely vary between adults and children, and for the purposes of this paper, I have chosen to focus on adult experience. Privacy, safety, informed consent, and ethics are complex topics when discussing both psychological treatments and AI. For this reason, children and adolescent will be mentioned as appropriate, but their unique experience will not be thoroughly investigated.

Theoretical and Conceptual Framework

Cognitive Behavioural Theory and The Transdiagnostic Theory of Eating Disorders

In this capstone, I approach AN pathology through a cognitive behavioural lens. Cognitive behaviouralism is an umbrella term under which there are many learning, cognitive, and behavioural theories (Gonzalez et al., 2020). It suggests that our thoughts, emotions, and behaviours can have profound impact on one another, and that faulty thinking can distort how we see the world. Several of the modalities and interventions presented in this paper use cognitive behavioural frameworks, and behavioural modalities are the most researched in the treatment of AN (Russell et al., 2023). Cognitive behavioural therapy can be helpful in creating goal-driven solutions, and drawing attention to maladaptive cognitive distortions that perpetuate disordered behaviours (Dewan et al., 2018; MacDonald et al., 2020).

I have grounded my conceptualization of eating disorders in definitions from the Diagnostic and Statistical Manual (DSM-5-TR). In practice, I support Fairburn et al.'s (2003) Transdiagnostic Theory of Eating Disorders, which is cognitive behavioural in its principles. This theory posits that there are several core elements that maintain all eating disorders, including perfectionism, mood intolerance, low self-esteem, and an excessive emphasis on shape and weight in relation to self-worth (Fairburn et al., 2003). These cognitions can perpetuate dysfunctional behaviours, and behaviour change is a critical component in AN recovery (Fairburn, 2008; Gaudiani, 2018). Constructivist, humanistic, and other theoretical lenses can also offer value to the treatment of AN, but long-term behaviour change is essential to recovery.

Intersectional Feminist Lens

An intersectional feminist lens allows researchers and clinicians to view individuals with AN more holistically, and within the context of their culture, society, and other ideological paradigms (Carastathis, 2014). This lens encourages a view of people with eating disorders that considers their multiple identities, social locations, and the role of privilege and oppression in their lived experience (Carastathis, 2014). People who live in marginalized bodies, people of colour, people with different abilities, and people of different sizes, experience eating disorder pathology in uniquely intersectional ways.

Pervasive stereotypes suggest that only young, white, straight women live with AN (Moreno et al., 2023). As will be see in chapter two, research studies commonly only use mostly white females in their samples. Recently, a longitudinal, systematic review of eating disorder research found that the racial and ethnic diversity in sample populations has increased over time, but that 70% of total participants in the studies they looked at were white, and 88% were from Western countries (Egbert et al., 2022). Anorexia affects all races, genders, abilities, ages, and all

other dimensions of culture and social location. People who experience systemic marginalization and bias likely experience more barriers to treatment for anorexia and other eating disorders than people of dominant cultures (Moreno et al., 2023). An intersectional feminist lens supports my work both in clinical practice and academia by helping me to always remember that eating disorders are a social justice issue.

Contribution to the Field

Eating disorders have the highest mortality rate of any mental illness (Stone et al., 2021), and suicide is the second leading cause of death among individuals with AN (American Psychiatric Association, 2022; Krug et al., 2025). The risk of death by suicide in those with AN is estimated to be 18 times higher compared to age- and gender-matched individuals without the disorder (American Psychiatric Association, 2022; Krug et al., 2025). Anorexia is associated with many medical risks, including bone density loss, changes in heart rate, digestive issues, and more (Gaudiani, 2018). Cognitive behavioural therapy is the most common treatment for adults, and family-based therapy is the most common treatment in children and adolescents, yet only about half of people will show clinical improvements within a year of receiving these therapies (Mills, 2023). This low success rate highlights the need for expanded research on the topic, and new solutions to improve outcomes in this population. This paper will generate discussion on innovative ways to approach the treatment of AN and add to counsellor awareness and confidence for clinical decision making.

This paper focuses on how AI might support the treatment of AN, a disorder that can be devastating and deadly. If AI can help people to recover from this illness, these possibilities should be explored with an ethical and pragmatic approach. AI is gaining traction in clinical practice and research, but opinions seem to be mixed. Numerous academic articles highlight

ethical concerns, while others have recorded pilot studies that garner excitement, but offer little in the way of research validated practice (Alder, 2025; Fiske et al., 2019; Nasir et al., 2025; Sharp et al., 2023). The findings of this paper may also be helpful for clinicians working with a range of populations. Anecdotally, I have found that AI in therapy both excites and terrifies clinicians, and the academic discourse on the topic mirrors these sentiments (Burger & Ghosh, 2025; Cuzzolaro, 2023; Sharp et al., 2023). This capstone seeks to encourage researchers and psychotherapists to remain open to the wide-ranging possibilities that AI offers in mental health practice, while being dutifully aware of the risks involved.

Reflectivity and Positionality Statement

Social Location

My social location is one of many privileges. I am a white, cis-gendered, heterosexual woman, and I grew up in Canada with a culturally Western lens. I did not experience trauma as a child, I have never experienced food or resource scarcity, and I did not have an eating disorder when I was a minor. These are all factors that likely reduced my risk of eating disorder severity, and increased my chances for recovery for the disordered behaviours I experienced as an adult.

I have completed post-secondary education, and identify as middle class, which affords me access to safety and security. As such, I have access to many resources and opportunities that those from marginalized groups may not be privy to, such as education and mental health support. This privilege has meant that I have never experienced significant barriers to my personal and professional growth. I've also had access to mental health care through education and employer plans; the high price-tag of counselling and pharmaceuticals has not been a stressor when budgeting. This is a luxury and privilege that I do not take lightly. I acknowledge that many people around the world suffer from mental health conditions including eating

disorders, and do not have access to essential and lifesaving care. To mitigate bias in this capstone, I have worked to incorporate anti-oppressive and social justice approaches to exploring this research and the innovations described. I will critically examine barriers to treatment experienced by marginalized groups, and hypothesize how existing and additional barriers might impact the use of AI in the counselling field.

Throughout my career and education, I have been taught to prioritize efficient solutions, and to uphold the importance of science-backed information. As such, I am biased towards therapeutic treatments that show improvement and toward empirical evidence. I would like to see faster and more effective ways to deal with eating disorder pathology in my lifetime, which may be why I have chosen to look at technology supported behavioural therapies in this paper. I recognize the complexity of AN treatment, however, and believe that long-term recovery is likely to require more than cognitive experiments and behavioural changes. I also appreciate constructivist lenses but acknowledge that I have spent most of my adult life working within corporate, colonial structures that prioritize that which can be proven. This represents just one approach within psychology, and I am actively working to integrate diverse ways of knowing and being into my knowledge base and clinical practice. To mitigate this bias, I will highlight gaps in existing therapies and note where biases in Western, colonial perspectives have likely impacted research and practice.

Personal Experience with Disordered Eating

In 2024, I read the feeding and eating disorders chapter in the DSM-5-TR for the first time and realized that I have met the diagnostic criteria for more than one eating disorder in my lifetime. I have struggled with body image issues, food restriction, and compensatory activities for most of my adult life. I have never been diagnosed with an eating disorder, I have never

received treatment for an eating disorder, and have I never been hospitalized for any mental illness. I can empathize with the secrecy associated with eating disorders; my own secrecy meant that nobody in my life knew how badly I was struggling. I have never been underweight and have lived most of my life in a straight-sized or mid-sized body. In some ways this is a privilege, because I have always looked mostly 'normal'. This also means that many people, including medical professionals, have missed important cues about the extent of my food restriction, compensatory behaviours, and disordered thoughts.

I work to mitigate my lived experience bias each time I work with clients at the Looking Glass Foundation for Eating Disorders, where I am currently in my practicum placement. I reflect on client experiences and think deeply about how countertransference might be affecting my offering and capacity as a counsellor. I have implemented the same practice while writing this paper. However, this part of my story is why I am passionate about recovery from eating disorders, and I embrace this as valuable lived experience to help further empathize with clients. I believe that the conversation around anorexia is one that should be approached with passion and with a social justice lens. As such, I have not entirely eliminated biases in this area. My values for accessible mental healthcare remain a driving factor in this work. I am human first, and then a clinician; I reject the colonial imperative to put my values about equitable access to eating disorder treatment on hold for this research paper.

Professional and Academic Background

With a background in communications, brand, and marketing, I bring contextual knowledge to discussions of digital media including AI-based technologies. Using a critical media lens in my academic work and in my practice affords me the opportunity to see emerging trends and opportunities that may be unnoticed to others in the psychotherapy field. Digital

media can have both positive and negative impacts on people's experience of identity and sense of belonging (Austin et al., 2020). As someone who has been involved in marketing and communications for many years, I have observed that people often spend significant periods of time online and believe that this has an immense impact on their daily lives and experiences. I believe counsellors can and should include digital lives as part of their clients' identities.

I've noticed that the research itself holds substantial bias particularly as it pertains to AI as a commodity. Some articles and studies that I read during research for this project showed a direct path from research to saleable AI-based goods and services (e.g. Fitzpatrick et al., 2017). In my opinion, these papers draw direct links from consumer needs to product marketability, and ultimately, revenue is an end goal. I am skeptical of objectivity in these scenarios, especially when third-party research is not included. I find it frustrating that there are no clear policies to mitigate this and believe that researchers are often not transparent enough about their motivations.

While I have experience working with various technologies, I do not have a background in computer science, artificial intelligence, or programming. For this reason, my descriptions and applications of AI and other tech may be limited.

Definition of Terms

Specific terms are used throughout this paper, and an understanding of their definitions is important for the reader. The following terminology will be used throughout this capstone research paper. For terminology related to eating disorders, the DSM-5-TR is used as a foundation for definitions.

Alexithymia

People who experience alexithymia typically have trouble identifying and describing their emotions (Gramaglia et al., 2020). They often have a hard time finding words to describe how they are feeling and sometimes find it difficult to distinguish between feelings in the body and emotional experiencing. Alexithymia is commonly experienced by people living with autism (Kinnaird et al., 2019), and has also been linked to anorexia nervosa (Gramaglia et al., 2020). Alexithymia is associated with an impaired ability to regulate emotions and can have an impact on treatment outcomes for a variety of mental health conditions (Hogeveen & Grafman, 2021)

Anorexia Nervosa (AN)

Anorexia nervosa is an eating disorder characterized by the restriction of food and calorie intake which leads to a weight that is lower than what would be expected for an individual based on factors like age, gender, development, and health. The severity of the disorder is specified based on current BMI. People with anorexia nervosa exhibit a fear of weight gain or engage in behaviours that prevent weight gain. They also experience intense distress about how one's body size and shape, overvalue their body weight and shape in self-evaluation, or they do not or cannot recognize the impact of their low body weight (American Psychiatric Association, 2022).

Artificial Intelligence (AI)

Artificial intelligence is computer systems and programing that are built to mimic human intelligence, logic, and learning (Government of Canada, 2020). Several types of artificial intelligence are included in this paper, and sub-items definitions include discriminative artificial intelligence, generative artificial intelligence, and natural language processing. Definitions for these terms are included in this section.

Atypical Anorexia Nervosa (AAN)

Atypical anorexia nervosa is a subclassification of eating disorders under the parent diagnosis category other specified feeding or eating disorder (OSFED) in the DSM-5-TR. The criteria is the same as anorexia nervosa, except that the individual is not considered to be exhibiting significantly low weight (American Psychiatric Association, 2022). Atypical anorexia nervosa has been shown to be just as severe and distressing as anorexia nervosa (Sandoval-Araujo et al., 2024).

Body Mass Index (BMI)

Body mass index is measured by dividing an individual's weight by the square of their height (Centers for Disease Control, 2024). BMI classifies people in weight categories (underweight, healthy weight, overweight, obese) however it does not account for body composition, diversity of body types, or ability (Danasekaran & Dande Rajasekar, 2023).

Discriminative Artificial Intelligence (DAI)

Discriminative AI is a type of machine learning focused on predicting outcomes and to label information. It is used for things like image recognition, analysis, and pattern identification (Lv, 2023).

Eating Disorders

Eating disorders are a group of mental health disorders listed in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5-TR). Eating disorders are characterized by disturbances in eating habits and sometimes include severe distress about body weight and/or shape. Types of eating disorders listed in the DSM-5-TR include anorexia nervosa, bulimia nervosa, binge eating disorder, avoidant/restrictive food intake disorder, pica, rumination

disorder, other specified feeding or eating disorder, and unspecified feeding or eating disorder (American Psychiatric Association, 2022).

Generative Artificial Intelligence (GenAI)

Generative AI is used when new information or data is created. It uses data and machine learning algorithms to generate outputs such as text, images, and video (Lv, 2023). ChatGPT, Google Gemini, Adobe Firefly, and Microsoft Copilot are examples of popular GenAI applications.

Machine Learning (ML)

Machine learning takes a large amount of data and processes it to find patterns that are replicable. Algorithms are often built using machine learning outputs (Xian et al., 2024).

Natural Language Processing (NLP)

Natural Language Processing analyzes text and voice data to detect various characteristics, themes, and patterns. It is used in technology such as automatic note-taking systems (Alder, 2025; Esmaeilzadeh, 2025).

Nutritional Rehabilitation

Nutritional rehabilitation is contemporary language for what has historically been called refeeding. This is a necessary process for malnourished patients with AN, and it involves helping people who are starving begin to nourish their bodies. This can be a challenging process, in part because changes in electrolytes can have dire effects on one's body, leading to fluid shifts that are referred to as refeeding syndrome. The fluid shift associated with refeeding syndrome is not a focus for this capstone, but it is important to note that it can lead to critical health emergencies and death when not closely monitored (Gaudiani, 2018).

Therapeutic Alliance

The therapeutic alliance describes the collaborative relationship between a client and therapist, and is often created and maintained through the process of transference and countertransference. It is characterized by mutual trust, respect, and agreement on therapeutic goals between client and counsellor, and is usually considered integral in an effective working relationship and positive treatment outcomes (Cormier et al., 2017).

Stigma

Stigma describes unfounded, negative beliefs or attitudes towards a group of people because of a particular quality or situation in life. In anorexia nervosa and other eating disorders, this sometimes manifests as a sense that these disorders are volitional and that people with AN should be able to simply eat to recover (Dimitropoulos et al., 2016). Stigma undermines to the complexities of mental health disorders and can become internalized, creating barriers to accessing care and therapeutic support (Aird et al., 2025; Crisafulli et al., 2010; Dimitropoulos et al., 2016).

Virtual Reality (VR)

Virtual reality is a simulated, computer-generated environment that allows users to interact with and experience a digitally constructed world. VR simulations reproduce real or imaginary environments, objects, and other elements with which the user can interact or engage. This may include visual, sound, touch, smell, and taste interactions. VR is sometimes used in therapeutic settings. In the context of this capstone, VR is discussed primarily in relation to its use in exposure therapy for the treatment of AN (Clus et al., 2018).

Overview of Paper

Following this introductory chapter, the literature review will be presented in chapter two. After this, chapter three will discuss key themes identified in the literature and offer suggestions for future research, practice, and policy.

Chapter Two

Chapter two contains the literature review for this capstone, and it is organized around two central themes related to the research question. The first is a broad overview of artificial intelligence. Due to the lack of empirical evidence specifically addressing GenAI-based therapies for AN, this section remains brief. The second theme is anorexia nervosa in adults, and the research is organized into several sub-themes. It begins with an overview of the pathology and presentation of anorexia, followed by a comparative discussion of atypical anorexia nervosa. The review then explores stigma related to anorexia and describes community perspectives stigma related to AI-based technologies in psychotherapy. Next, gender is discussed in relation to both anorexia and to inclusive digital and AI-facilitated spaces. Following this, a section on suicidality describes correlations and prevalence in those with anorexia and discusses how natural language processing may enhance suicide risk assessment in this population. Finally, common treatment practices are reviewed, including inpatient care for severe cases of AN and three empirically supported outpatient approaches. This section also explores the respective strengths and limitations of each approach.

Chapter Three

Chapter three delves further into the limitations of treatment for AN and explores ways that GenAI might address some of these gaps or augment current therapeutic approaches. It highlights potential applications of GenAI in improving access to treatment, personalizing care,

and enhancing existing modalities like cognitive behavioral therapy (CBT), exposure therapy, and externalization. The chapter discusses how GenAI could mitigate barriers such as stigma, geographical limitations, and long wait times for treatment. Ethical concerns, including privacy, embedded bias, and the risks of harmful GenAI chatbot advice, are critically examined. This chapter proposes several topics at the intersection of AI and AN as areas for future research, aiming to contribute to a currently sparse body of literature. The importance of safeguards to ensure safe and equitable use of GenAI in psychotherapy is emphasized, and the chapter concludes with reflections and recommendations for regulatory policies. While GenAI offers exciting possibilities, chapter three underscores the need for further research, interdisciplinary collaboration, and ethical oversight to responsibly integrate AI into AN treatment.

Chapter Two: Literature Review

The research question in this capstone is: *How can generative artificial intelligence support the treatment of anorexia nervosa?* This literature review begins with a high-level description of GenAI, followed by a more detailed examination of current research and knowledge about AN. Sub-themes explored within the AN literature include atypical anorexia nervosa, stigma and help-seeking behaviors, gender diversity, and suicidality. This chapter also includes a description of four common treatment approaches for AN, which are followed by critical analyses of these approaches. Relevant research on AI is included in each of these sub-themes as appropriate. Chapter three will further elaborate on these gaps by presenting some current research topics that explore AI in the psychology field and propose ways that researchers and clinicians might look to support gaps in treatment with similar solutions.

A Brief Introduction to Generative Artificial Intelligence

Artificial intelligence (AI) is founded in machine learning (ML), which involves processing and analyzing large datasets to identify patterns and develop logic-based algorithms (Xian et al., 2024). Discriminative AI (DAI) is typically used in the prediction and labeling of information, and is the backbone of generative AI (GenAI) and integral to its performance (Lv, 2023). GenAI is used to create new outputs based on prior learning, often based on prior DAI established algorithms (Lv, 2023). This is an important distinction; DAI has been used for decades to process large amounts of information in many industries, but GenAI is newer. Understanding this context is helpful when considering how both DAI and GenAI might work together to support the treatment of AN.

GenAI has been evolving at a rapid pace following what has been described as the "breakthrough" of ChatGPT as an open, free, and accessible tool (Sætra, 2023, p. 2). Since

GenAI can create new content, opportunities for innovation may unfold in psychotherapy. However, these innovations may bring new ethical implications, some of which have been discussed by early adopters in academia (Alder, 2025; Nasir et al., 2025; Sharp et al., 2023). For example, in their recent editorial, Sharp et al. (2023) speculate that AI is likely misunderstood by some mental health professionals, and that fears regarding ethics, risks, privacy and safety abound. An in-depth discussion about the applications, opportunities, and risks associated with GenAI in psychotherapy is not the focus of this literature review, however this contextual knowledge will provide helpful background when relevant GenAI studies are explored.

The Intersection of GenAI and Anorexia Nervosa

AI is rapidly transforming various fields, including healthcare and mental health. GenAI has emerged as a powerful tool capable of creating new content, analyzing complex data, and personalizing user experiences. While its applications in psychotherapy are still in their infancy, early research suggests that AI has the potential to enhance therapeutic practices, improve accessibility, and address gaps in care (Alder, 2025; Xian et al., 2024). However, the integration of AI into mental health treatment also raises significant ethical, safety, and practical concerns, including issues of privacy, embedded bias, and the reliability of AI-generated outputs. These considerations are especially critical when exploring the use of AI in treating complex and life-threatening conditions such as anorexia nervosa.

In conducting research for this paper, there were very few articles of note that combined the topics of GenAI and AN. As such, discussion on GenAI remains brief for this literature review. In the next section of this paper, the pathology of anorexia will be described, and some common forms of treatment will be discussed. In chapter three, the focus of the discussion will

return to GenAI, and describe how these technologies may support innovations in the treatment of AN, while also describing the ethical implications and risks.

Anorexia Nervosa: Diagnosis and Pathology

For the purposes of this capstone, the Diagnostic and Statistical Manual (DSM-5-TR) criteria will be used to define AN (American Psychiatric Association, 2022). This is the resource that Canadian clinicians would use to define and diagnose mental health conditions including eating disorders. AN is an eating disorder characterized by the restriction of food and calorie intake which leads to a weight that is lower than what would be expected for an individual based on factors like age, gender, development, and health (American Psychiatric Association, 2022). The severity of the disorder is specified based on current body mass index (BMI). People with AN exhibit a fear of weight gain or engage in behaviours that prevent weight gain. People with AN also experience intense distress about their body size and shape, overvalue their body weight and shape in self-evaluation, or do not recognize the impact of their low body weight (American Psychiatric Association, 2022).

Critiques and Challenges with the DSM and the Medical Model of AN

The DSM-5-TR has flaws, including a lack of attention to diversity and culture, rigid language for diagnoses, and it may perpetuate stigma by pathologizing some normal human experiences (Dang et al., 2025). It uses a medical model for mental health, which is often void of a systemic lens (Malott et al., 2023). The DSM-5-TR does not acknowledge the many barriers and inequities that result in varying levels of mental health, especially in marginalized communities. It focuses on symptoms as opposed to causes, and while diagnostic labeling may be validating for some, it can be stigmatizing for others (Dang et al., 2025; Malott et al., 2023).

Back in 2013, an update to the DSM removed amenorrhea as a diagnostic criteria for AN, meaning individuals no longer need to miss a menstrual period to establish diagnosis (American Psychiatric Association Division of Research, 2014). This change is significant, as earlier research likely excluded men, post-menopausal women, and women who do not menstruate (American Psychiatric Association Division of Research, 2014). While this capstone does not reference primary research studies conducted prior to 2013, older research may still be included in recent meta-analyses, potentially introducing bias into the data. Despite the removal of this exclusionary criterion, current samples in AN research remain predominantly female, a trend this paper will further examine.

In addition to the removal of amenorrhea, the 2013 update to the DSM revised the diagnostic criteria for AN by replacing specific BMI thresholds with the more flexible criterion of "significantly low weight." (American Psychiatric Association Division of Research, 2014). Significantly low weight constitutes a weight that is less than what would be considered normal or expected (American Psychiatric Association, 2022). BMI continues to be used as a measure of AN severity, and it also appears on the Government of Canada website as a measure of body weight classification to "indicate health risks" (Government of Canada, 2017). However, BMI is a metric that was created based on average male height and weight, and was never intended to account far a range of factors such as sex, race, activity level, ability, or special circumstances (Danasekaran & Dande Rajasekar, 2023; Prentice & Jebb, 2001). For individuals with eating disorders, many people with normal weight according to the BMI scale face serious psychological and physical risk (Gaudiani, 2018; Walsh et al., 2023). For example, youth with atypical anorexia nervosa have been shown to exhibit hypotension and bradycardia at similar or only slightly lower rates than those with AN (Walsh et al., 2023). A continued focus on BMI in

AN diagnoses may lead clinicians and medical professionals to overlook severe disorders simply because the patient does not look underweight (Veillette et al., 2018). In the context of recovery, a clinical diagnosis that includes BMI may dictate the level of treatment available to a patient (Webb et al., 2024). As such, the continued emphasis on weight as a factor for AN diagnosis may contribute to both stigma and barriers to treatment for straight-sized and larger-bodied people with AN.

Prevalence of AN in Canada

It is difficult to find accurate Canadian AN statistics. Statistics Canada is a commonly used source for citing the prevalence of eating disorders including AN. According to this data, 261,000 Canadians (.8%) have a current eating disorder (Statistics Canada, 2024). Statistics Canada relies on the Mental Health and Access to Care Survey (MHACS) as its primary data source, which has some notable weaknesses. The MHACS website reports recruitment of 40,000 people for this survey in order to "produce reliable estimates at a national level", and that 25% of this sample responded (Statistics Canada, 2023) This means that, in 2022, answers from 10,000 people were used to estimate the prevalence of all mental health disorders in Canada including eating disorders. The survey asked, "do you have an eating disorder such as anorexia or bulimia?" (Statistics Canada, 2022), which combined two distinct disorders in the resulting data. The survey did not provide other clinical eating disorders as possible answers, so it is unclear how people with avoidant restrictive food intake disorder, binge eating disorder, and other feeding and eating disorder not otherwise specified might have answered this question (Raffoul et al., 2025). Possible responses included "yes," "no," and "don't know/refusal" which may not capture the nuance needed to reflect both clinical and subclinical presentations and may not be descriptive enough to provide context for people with lower mental health literacy levels.

In comparison to Statistics Canada's numbers, The National Initiative for Eating Disorders (NIED) website estimates that 4% of the population in Canada lives with an eating disorder (National Initiative for Eating Disorders, 2024), and the Canadian Mental Health Association (CMHA) estimates that between 0.5% and 4% of women in Canada will experience anorexia during their lifetime (Canadian Mental Health Association, 2014). Reliable data regarding other genders could not be found on any governmental or advocacy association websites. Both NEID and CMHA suggest that official government data regarding eating disorders and AN prevalence in Canda are largely understated.

Atypical Anorexia: Not So Atypical

People who exhibit the symptoms of AN but who live in normal or larger sized bodies are often diagnosed with atypical anorexia nervosa (AAN). AAN is a subclassification of eating disorders under the parent diagnosis category other specified feeding or eating disorder (OSFED) (American Psychiatric Association, 2022). The diagnostic criteria are identical to AN, except that the individual is does not need to exhibit significantly low weight (American Psychiatric Association, 2022). Bodyweight is, therefore, the only distinguishing factor for the differential diagnosis of AN and AAN. As such, it is important to note that many treatments designed for AN are also likely to be helpful in the treatment of AAN, though no evidence-based treatments exist for AAN (Crumby et al., 2024). Based on research that follows, this capstone will consider both AN and AAN as included when discussing symptomology of AN, unless otherwise stated. It will also include AAN when discussing how GenAI might be a supportive treatment tool for AN.

Treatment effects for people with AAN and AN have been compared using some creative research applications. For example, Crumby et al. (2024) implemented a quantitative data

analysis to examine two existing open series trials and found that people with AN and AAN responded similarly in both. In the first trial, online exposure therapy targeting eating disorder related fears was delivered to 127 people (58 with AAN and 69 with AN). Crumby et al.'s (2024) data analysis showed that people with both AN and AAN showed improvements in AN symptomology, as well as decreases in food and eating anxiety. Those with AAN had slightly greater reductions in food anxiety. In the second trial, 34 people (16 with AAN and 18 with AN) were provided with personalized one-on-one treatment based on their individual symptoms over nine sessions. Both groups showed improvements in eating disorder symptoms and reductions in food fears and food avoidance, though people with AAN improved more than those with AN (Crumby et al., 2024). This suggests that treatments tailored for AN are not only effective for those with AAN, but they may also result in larger effect sizes than for those with AN. A strength of this study was its innovative use of existing data to compare treatment effects for AN and AAN. Unfortunately, the primary data for both trials was primarily white and female, and the sample size for the second trial was quite small. It is important for counsellors to understand the similarities between AN and AAN to make educated, evidence-supported clinical decisions about treatment. AAN can be just as serious as AN, and counsellors should be aware of implicit biases related to body size that may come up during treatment. It is also possible that people with AAN have experienced bias in other systems, and this may be a topic for discussion with these clients (Eiring et al., 2021; Moreno et al., 2023).

GenAI in Differential Diagnoses. The similarities between these AN and AAN have been further demonstrated Sandoval-Araujo et al. (2024), who used AI to compare data from those with AN and AAN. To do this, they conducted a quantitative experiment using a retrospective observational research design to analyze existing data from seven studies that

involved surveying people diagnosed with AN or AAN using the DSM-5 (Sandoval-Araujo et al., 2024) In total, 428 questionnaires regarding eating behaviours, cognitions, and physical attributes were analyzed. The researchers applied ML algorithms to this data, to test whether the algorithm could differentiate between AN and AAN. The data was derived from multiple commonly accepted questionnaires that standardize questions and measures for the experience of eating disorders. Sandoval-Araujo et al. found that difference between AN and AAN could not be detected by AI when bodyweight was removed as a data point. The aggregate data and descriptive statistics from this study show that aggregated data shows similar global mean scores from people with AAN and AN on the eating disorder questionnaire (EDE-Q), the fear of food measure (FOFM), and the eating fears questionnaire (EFQ), though some individual differences exist. Strengths of this study are its large sample size and open-data model, which suggests transparency and that it could be easily reproduced.

Sandoval-Araujo et al.'s (2024) study uses standardized data sources such as the EDE-Q and the FOFM which have been proven to be valid and reliable measures for AN pathology (Berg et al., 2012; Fairburn & Beglin, 2011; Levinson et al., 2019b; Levinson & Byrne, 2015). The EDE-Q has been shown to exhibit test-retest reliability, internal consistency, and inter-rater reliability (Berg et al., 2012). The FOFM has been shown to have good convergent, divergent, and incremental validity, and good test-retest reliability for both adults and youth (Levinson & Byrne, 2015; Vanzhula et al., 2023b). The EFQ appears to be a newer measure and seems to used less frequently in the research than the other two measures. It has also been shown to have good validity in measuring psychometric properties for AN (Dimitropoulos et al., 2016; Levinson et al., 2019b; Vanzhula et al., 2023b).

The nature of a retrospective study designs like that of Sandoval-Araujo et al. (2024) and Crumby (2024) implies a reliance on the validity and reliability of existing research. Some of the original sources were difficult to locate, and therefore individual primary study weaknesses cannot be identified. It is not clear whether participants were paid for their participation in the studies included in these reviews, and/or whether they were provided with any substantive AN/AAN treatment. As such, internal validity threats such as compensation and resentful demoralization the primary data cannot be determined (Creswell & Creswell, 2023).

Based on Sandoval-Araujo et al.'s (2024) study, machine learning offers promise for objective analysis in research and differential diagnostics, which in turn may benefit the treatment outcomes of AN. Sandoval-Araujo et al. (2024) demonstrates how large amounts of research data could be used to uncover patterns in existing AN research, which may support treatment planning. However, this does not come without risk. A weakness of this study is its potential replication of embedded bias due to lack of homogeneity in data samples. Most of the people in this study were white (96.8%), cisgender (94%), and female (98%) (Sandoval-Araujo et al., 2024). Although technologies may appear neutral, biases in primary research data are embedded in any secondary outputs that use ML (Xian et al., 2024). As well, ML algorithms are built by humans and therefore may replicate biases of technicians and researchers who design the mechanisms by which they operate. Human biases are transferred into the design of AI by way of learning models, and this has the capacity to reinforce existing social inequities (Fiske et al., 2019). While ML and GenAI may be viable in diagnostics and clinical decision-making in the treatment of AN, the limitations of the dataset in this study also highlight the risks associated with such solutions.

Sandoval-Araujo et al.'s (2024) conclusions about AN and AAN being diagnostically indistinguishable without a bodyweight data point are consistent with previous literature on the topic. In a systematic literature review by Walsh et al. (2023), quantitative data from 24 existing research studies were compared, and the authors concluded that severity and symptoms do not differ between AN and AAN. Like Sandoval-Araujo et al.'s (2024) analysis, Walsh et al.'s (2023) study relies on an amalgamation of primary research. The authors did not provide the exact number of respondents in primary data surveys, which makes it difficult to determine the generalizability of the study. The authors highlight some of the primary data biases such as lack of data about men, and that many of the studies did not report race other than percentage of participants who were white (Walsh et al., 2023). These gaps are reflected in their meta-analysis. While intended to be neutral, a potential weakness of a systematic study is the need for some level of data interpretation, which means that bias in analysis could be present in both the primary data and in the meta-analysis (Drucker et al., 2016).

While Crumby et al. (2024), Sandoval-Araujo et al. (2024) and Walsh et al.'s (2020) studies have limitations, these secondary sources offer a focused analysis and a summary of findings across a multiple of studies regarding the experience of AAN compared to AN (Efron & Ravid, 2019). The large amount of aggregate data shows the similarities between AN and AAN, and demonstrates that the two disorders are psychologically similar in experience, though they may have some physiological differences (Walsh et al., 2023). This is important for counsellors when making clinical decisions and ethical treatment plans for people with AN and AAN. It is also important for future researchers to consider as existing research may have been limited by DSM diagnostic criteria. Given the similarities between AN and AAN, this capstone will

consider treatments shown to be effective for AN to also be viable treatments for AAN. Clarity will be provided for specific studies about AN and/or AAN as appropriate.

Stigma and Help-Seeking in Anorexia Nervosa

Stigma may be a barrier in accessing to treatment for those with AN, and counsellors may need to consider whether their clients are comfortable bringing these topics forward. Innovations and technology will be discussed in this capstone as a possible avenue for reducing and mitigating such barriers to care. AN might also be missed or underreported due to stigma associated with eating disorders. In a qualitative study of 19 people undergoing inpatient treatment in Toronto, Dimitropoulos et al. (2016) found that all respondents believed that the public does not see AN as an illness, that most also believed that the public sees AN behaviours as a choice rooted in vanity, and that people do not understand the complexity involved in recovery. This study used a semi-structured interview model. This provides first-hand information about experiences and offers the opportunity for participants to convey nuance, which can be considered a strength. The researchers intentionally did not use words such as stigma, discrimination, or stereotypes in order to minimize influence (Dimitropoulos et al., 2016). Weakness of this study include its small sample size, the homogeneity of the sample (100% female, 68% white), and the fact that the study is nearly a decade old. The sentiments expressed by the participants may not be the same today. Data was collected between 2009 and 2012, and the DSM-IV was used to diagnose individuals in this study. As discussed above, this may exclude a number of people with AN according to the DSM-5-TR diagnostic criteria. Regardless, the internalized stigma uncovered in this study suggests a need for new and innovative ways to treat people who might struggle with disclosures or feelings of stigmatization.

In a more recent study, Aird et al. (2025) measured stigma related to eating disorders as compared to stigma related to depression. In this quantitative experimental study, 235 Australians recruited through university flyers and social media were asked to complete surveys regarding perspectives on eating disorders or on depression. The study showed participants expressed significantly higher levels of stigma related all eating disorders including AN as compared to depression (Aird et al., 2025). Strengths of this study include its use of random assignment to one of four conditions for evaluation (AN, bulimia nervosa (BN), binge eating disorder (BED), or depression), and its novel way of measuring stigma in its comparison to a mood disorder. It also used established scales such the eating disorder stigma scale (EDSS) (Crisafulli et al., 2010). Weaknesses include its generalizability across cultures and the researchers use of convenience sampling at a university, which is unlikely to be representative of a wide range of ages, socioeconomic statuses, or life stages. In addition, the group was split into four condition groups, which means the total sample size for those who rated stigma related to AN was only 54. The study does not mention exclusion criteria for those who have experienced an eating disorder or depression, and this may have been a factor in skewing response data.

Dimitropoulos et al.'s (2016) study demonstrates how people may internalize stigma related to AN, and Aird et al.'s (2025) study shows the negative perceptions of AN as compared to other mental health disorders. It has been established that stigma can be a barrier in taking steps towards seeking help for mental health (Hoffman et al., 2024), and these studies suggest that AN related stigma might be preventing people from getting the help they need. This capstone seeks to explore whether GenAI might be an avenue to support the treatment of AN. As such, an exploration of AI in relation to stigma follows.

AI-Based Therapies and Help-Seeking Stigma. Those who support GenAI in psychotherapy have pointed to this help-seeking stigmatization as a motivator for research and innovate alternatives (Rowshon et al., 2025). AI may reduce stigma by providing autonomy and privacy, and offer an avenue to help for people who might not be comfortable reaching out for care (Fiske et al., 2019). Some help-seeking people may show a preference for virtual agents over human support. People with lower mental health literacy have reported that they prefer such options because they have a greater ability to self-pace discussions about mental health when communicating with virtual agents versus humans (Fiske et al., 2019).

The stigma around help-seeking behaviours is especially high in adolescents and young adults (Hoffman et al., 2024). In their cross-sectional quantitative study of young adults' attitudes towards AI chatbots in mental healthcare, Hoffman et al. (2024) found that young adults with high levels of self-stigma toward human interventions (i.e. those unlikely to seek traditional mental health support) were more likely to view therapeutic AI such as chatbots in a positive light. Young adults who had a lower level of stigma around human to human therapy (i.e. those likely to seek traditional mental health support) viewed AI more negatively (Hoffman et al., 2024). These findings suggest that AI based therapies may be a bridging option for young people who feel higher levels of stigma as a barrier to seeking mental health support, even though it might not be a preference for those who would normally choose human interventions.

Hoffman et al. (2024) recruited a fairly large number of participants (109) and the sample was 61% female, 39% male, and 1% undisclosed. All participants were Australian and aged 18 – 24, and they were recruited through university posters and social media posts. More than half of the participants (56%) had engaged in psychotherapy activities of some kind. One of this study's strengths is its cross-sectional survey using existing and reputable surveys. They used a modified

version of Self-Stigma of Seeking Help scale, which has been used for a number or previous studies and has shown to be valid and to exhibit internal consistency (Hoffman et al., 2024; Vogel et al., 2013), and a version of the Attitudes Toward Seeking Professional Psychological Help scale, which has also been proved to be a valid and consistent measure (Elhai et al., 2008; Hoffman et al., 2024). However, the researchers modified this scale to incorporate AI, and the unmodified version has only been used to measure human-to-human help seeking attitudes and behaviours. Additional studies to validate the modified versions of the scale would improve validity. The sample was homogenous in age and culture (84% identified as Australian), which may make it difficult to generalize these findings to other cultures and ages. Hoffman et al. (2024) note that a qualitative and/or longitudinal design could be helpful to determine how perspectives of AI versus human psychotherapy change over time, and to provide context for some of the barriers to each delivery mode. This study demonstrates that AI-based psychotherapies can reduce help-seeking stigma in some populations. Stigma is a possible barrier to treatment for some people with AN. As such, more work may be warranted to explore AI's role in reducing stigma in accessing the treatment of AN.

Gender Diversity and Anorexia Nervosa

Some of the stigma related to AN may be related to the widely held misconception that only young, white females struggle with AN (Rodgers et al., 2018). As discussed earlier, only women who menstruate could be diagnosed with AN prior to 2013, and because of this systemic bias, many studies only include females. All genders are at risk of developing AN, however; in fact sexual and gender minority (SGM) individuals are more likely to have eating disorders or exhibit disordered eating behaviours than cisgender and heterosexual people (McGregor et al., 2023).

In a study to explore the prevalence of disordered eating behaviours in SGM youth, Kerr et al. (2024) conducted a cross-sectional quantitative study of 660 gender-diverse people who had visited a health facility in Australia for gender-affirming care. They found that 23.9% of these people reported AN symptoms, and that those who were unsure of their gender were most likely to report AN symptoms (Kerr et al., 2024). This demonstrates the high prevalence of AN symptomology in SGM people, and suggests the need for inclusive, gender-affirming treatments for those with AN. This study benefits from its use of standardized testing data, including the Branched Eating Disorder Test (BET), as well as its large sample size.

Although this study demonstrates high AN symptom prevalence in nonbinary and transpeople, the existence of symptoms does not equate an AN or AAN diagnosis. As such, it is not feasible to compare these rates to clinical AN rates for cisgender people. The authors note that their results are consistent with existing research on the topic, which has also suggested high levels of disordered eating thoughts and behaviours in trans and non-binary youth (Avila et al., 2019; Kerr et al., 2024). They also highlight that previous studies with this population have demonstrated higher levels of weight manipulation than were reported in this study (Kerr et al., 2024). Weight manipulation refers to behaviours that contribute to a change in body weight, such as restricting calories or specific food groups. This is an important distinction because a restriction of energy intake is a diagnostic criterion for AN, which counsellors should be aware of when working with this population (American Psychiatric Association, 2022).

In a similar cross-sectional study conducted in in the United States, Diemer er al. (2018) asked 452 transgender adults about their lifetime prevalence of eating disorders. They found that 4.7% of respondents had been diagnosed with either AN or BN in their lifetime, and that 7.4% of people self-reported one of these disorders. They found that gender nonconforming people who

were assigned female at birth were the most likely to report one of these eating disorders. A strength of this survey is its large, community-based sample selection, which was provided via listservs, social media, and community-based forums of self-identifies trans people who actively chose to participate in this study (Diemer et al., 2018). The survey was offered in English and in Spanish and provided at a fifth grade reading level which provided opportunities for lower literacy individuals to participate. Unfortunately, this study does not provide specific data for AN versus BN, but when considered in conjunction with Kerr et al. (2024), it is reasonable for counsellors to infer significant risk of AN in SGM clients. This highlights the need for innovative and adaptive practices that provide intersectional and inclusive support in AN treatment.

Inclusive Online Spaces for SGM People with AN. The intersection of gender diversity and eating disorders suggests that treatment strategies for AN should consider the experience of SGM people. Technologies, such as virtual spaces, may offer a potential pathway to enhance inclusivity in treatment and clinical practice. In a mixed methods study evaluating virtual support groups for SGM individuals with eating disorders, Brownstone et al. (2025) found that participants believed the groups were helpful in building community and safety and provided opportunities for exploring the intersection of gender identity, marginalization, and eating disorders. While this provides valid insight to the importance of community and intersectional spaces for healing in SGM people with EDs, for the purposes of this capstone it is important to note that only 16 of 27 people in this group had a diagnosis of AN or AAN; the remaining participants had a different ED diagnosis. This study's strength is its detailed and robust findings using both qualitative and quantitative data, which includes reflexive theme analysis. There is some diversity in the demographic data for this sample, including a range of body sizes, ages,

genders, and sexual orientations. Weakness of this study are its small sample size which may indicate low generalizability. As well, 85% of the participants identified as white. Despite these limitations, this study demonstrates the importance incorporating community and safety in AN treatments for SGM individuals (Brownstone et al., 2025).

Like the virtual group studied by Brownstone et al. (2025), online spaces such as social media have also been shown to represent a safer space for both adults and youth to explore their gender identity. Herrmann et al. (2024) studied online experiences of gender expression in German gender-diverse youth using a cross-sectional quantitative research design. They surveyed 165 trans and gender-diverse youth using a series of three questionnaires. They found that 60% of trans youth experimented with their gender online, and that 30% had come out online before coming out in real life (Herrmann et al., 2024). They also found that 51% of the respondents had endured negative online experiences including cyberbullying.

The strengths of this study were its novel exploration of the online experience for trans and gender diverse youth, the use of validated surveys, and the intentional collection of a fairly large sample of youth with a clinical diagnosis of gender dysphoria. Some limitations of this study are that most of the participants were assigned female at birth (87%), and that the study only describes the experience of youth ages 11 – 18 years old. This suggests that the results are may not be generalizable to the adult experience, and to SGM people who are assigned male at birth. The age range of this sample also represents a key time in lifespan development, and some of the participants may not have experienced puberty. Lifespan development is important for counsellors to consider in the treatment of AN certain stages of life have been shown to increase risk for the development of eating disorders (Zerwas & Claydon, 2014). For example, menarche can create higher risk for the development of AN because it is associated with physical

changes in the body that cause discomfort in some youth (Brandsma, 2007), and later stages in life such as menopause have been identified as possible triggers for relapse (Mangweth-Matzek et al., 2023).

Although Herrmann et al. (2024) used some validated measures, one of their surveys was self-constructed and has not been validated in previous studies. This study was also conducted between January 2020 and December 2022, which corresponds with the COVID-19 pandemic. This may have impacted many aspects of peoples' lives, including their experience of being online.

GenAI and Gender Identity. Herrmann et al.'s (2024) study is useful in demonstrating the feasibility of online spaces to create opportunities for connection and community for SGM individuals. It implies a potential applicability of GenAI for self expression and gender exploration. In addition, art therapy has been shown to help children and teens explore who they are and create a deeper, more complete picture of their true selves (Sahai & Tiwari, 2024). Artistic GenAI apps may be an innovative tool for identity expression in youth and adults alike.

Miltner (2024) explored the themes in 135 press and media articles about Lensa, a GenAI based photo app that creates themed user photos, such as "rock star" "princess" or "superhero." Gender may be an important element to the exploration of identity in counselling, and as such, modalities that support these explorations may be of interest to practitioners. As has been demonstrated, gender dysphoria or gender nonconformity has been shown to be a risk factor in the development of AN, and an intersectional approach may support a more inclusive and holistic treatment plan for these clients.

Miltner's (2024) study uncovered positive and negative themes. One of the positive themes uncovered was Lensa's capacity to facilitate gender identity exploration. Some news

articles included interviews with people who found photo apps like Lensa to be affirming for some trans and non-binary people, since the technology allows them to create images of themselves that match their gender identity (Miltner, 2024). This highlights the potential flexibility of GenAI as tool for inviting opportunities for people to explore both gender and their eating disorders in an intersectional way. GenAI may be a factor in developing community spaces for trans and gender diverse people experiencing AN.

This study is valuable in that it uses current voices from a wide range of media sources, but it lacks controlled testing and data. Since the author has used media as a source, the quality of information may be biased in ways that are unknown and undisclosed in this analysis. Readers of Miltner's (2024) thematic analysis must rely heavily on the author's interpretation. However, this article demonstrates that GenAI photo apps may be powerful tools with both pros and cons when it comes to gender dysphoria. As research continues and as technology evolves GenAI may become an effective tool for integrating identity exploration, and may become one way to support intersectional treatment practices for those with AN.

Suicide Risk and Anorexia Nervosa

According to the DSM, people with AN face a significantly increased risk of suicide, with rates reported to be as much as 18 times higher than those of comparable age and gender groups (American Psychiatric Association, 2022). The DSM reports suicide as the second most common cause of death in AN, and that between 25% and 33% of people with AN experience suicidal ideation. It is estimated that between 9% and 25% of people with AN have attempted suicide (American Psychiatric Association, 2022). While these statistics were deemed valid and reliable enough to be included in the DSM-5-TR, it is important to note that they originate from a

narrative review incorporating primary quantitative data from studies published as early as 1997 (American Psychiatric Association, 2022; Smith et al., 2018).

In a review article examining suicidal ideation and suicide attempts in eating disorders, Amiri and Khan (2023) used a quantitative meta-analysis to analyze data from 53 studies from 1995 to 2022. Although this review looked at suicide in all eating disorders, the authors provided specific pooled prevalence diagrams specifically for AN, using 21 of the 53 total studies. They found that suicidal ideation was present in half of total study participants, and suicide attempts were reported in 17% of people with AN in these studies (Amiri & Khan, 2023; Pedram et al., 2021). Most of the studies used for this review were from the United States, and the samples were primarily female. A strength of this review was the authors' choice to use only studies with sample sizes of 30 people or more, suggesting data quality considered in their search inclusion criteria. A key weakness of this study is that it did not include a cross-sectional analysis of comorbid mental health conditions. Also, the authors do not provide much background information on the articles selected, as this is a quantitative study. It is not clear how many of studies used clinical and/or inpatient samples versus outpatient, which makes it difficult to determine generalizability to the nonclinical population. The inclusion of mixed methods and qualitative designs may help to provide additional context on this topic. Despite these weaknesses, Amiri and Khan (2023) have established a correlation between AN and suicide. In British Columbia, counsellors have a duty to report suicidal intent in children and are legally protected when reporting harm to self in adults (Bryce, 2014). Counsellors can benefit from understanding how specific mental disorders, such as AN, may be associated with higher levels of suicidal ideation and/or attempts. This awareness allows clinicians to be keenly attuned to safety concerns, and to discuss risks with their clients.

Patten et al. (2024) used a cross-sectional quantitative study design to examine mortality rates in people with AN who had been discharged from hospital-based treatment. They found that rates of death in people with AN were similar to those with other mental disorders who had also been treated for psychiatric reasons in a hospital (Patten et al., 2024). However, they also found that suicide was the underlying cause of death for 14% of people with AN, compared to just 8% of people with other mental health diagnoses. A strength of this study is its geographical relevancy, as data used was taken from Canadian hospitals. One key complexity in this study is that the researchers used the International Classification of Diseases (ICD-10) criteria for AN diagnosis, rather than the DSM. This is important to note because most clinicians in Canada would use the DSM-5 to diagnose mental disorders, and because this capstone has used the DSM to define AN throughout this paper. Although the ICD-10 and the DSM-5 differ in language used to diagnose AN, themes and key criteria are similar in both. Both include deliberate weight loss through restriction of calorie intake, a fear of gaining weight or of developing fat on the body, and the body shape or contour as being a distressing and overvalued in their descriptions for diagnostics (American Psychiatric Association, 2022; World Health Organization, 2019).

GenAI and Suicide Risk Detection. Although precise rates are difficult to determine for intersectional populations, suicide risk remains a critical consideration in the treatment of individuals with AN. There has been some research on AI for the detection of suicide risk, centred on parsing language patterns using Natural Language Processing (NLP) algorithms (Esmaeilzadeh, 2025). This work gained momentum in 2014, when Poulin et al. (2014) used NLP to analyze veterans' medical records and find common charting words and phrases to indicate suicide risk. The researchers found that terms like agitation, fear, and delusions/psychosis were frequently reported on the medical records of veterans who had died by

suicide (Poulin et al., 2014). Counsellors and other mental health professionals may benefit from a greater understanding of how language can be analyzed to determine suicide risk. The purpose of the study was to add to the body of knowledge around keywords for risk assessment, which could potentially be used for future AI-driven risk assessment tools. A possible weakness of this study was the use of charting data rather than verbatim information from patients. This means that the content was filtered through medical professionals and coded, so it may only be helpful in similar settings. It also implies a risk of implicit and systemic bias towards patients, which may have impacted what the healthcare professionals wrote in the charts. Poulin et al. (2016) did not include a critical analysis involving the social locations of patients, which may have impacted the level of care they received due to systemic and cognitive biases in the medical field. This study intersects with the research question in this capstone by demonstrating that AI can identify patterns linked to suicidal ideation, a concern for which individuals with AN are known to be at elevated risk.

Similar deep learning and NLP algorithms have been used to uncover language patterns in suicidal social media users. In a computational research study by Tadesse et al. (2019), Reddit posts from suicide support specific subreddit threads were used as source data to find words that are frequently used by people experiencing suicidal ideation who are seeking help within the forum. The researchers found a correlation between suicidality and themes of hopelessness, guilt, and loneliness in content posted on Reddit (Tadesse et al., 2019). Understanding specific language that may be indicative of suicidality is helpful for counsellors to identify risk and make ethical clinical decisions. When working with people with AN, suicide risk may be elevated, and an awareness of themes such as hopelessness may need to be explored in relation to both suicide and the eating disorder presentation. While Tadesse et al.'s (2019) study does not impact

psychotherapy research and practice specifically, it demonstrates how AI might be able to amalgamate large data sets to help inform suicide risk assessment practices in therapeutic environments. This is the source data that may help to inform future GenAI-based therapeutic interventions in the treatment of AN (Lv, 2023; Xian et al., 2024).

AI may also be able to detect suicide risk through the analysis of vocal patterns, body language, and facial micro-expression recognition. In a review study of emerging trends in AI and ethics, Esmaeilzadeh (2025) suggested that such data analysis could track client mental health deterioration over time. They also note that algorithms have been implemented at crisis lines that scan for high risk language patterns have also been applied to crisis lines, to help with clinical decision making and that expedites access to human counsellors (Esmaeilzadeh, 2025). Other ways that AI is being trialed to screen for suicide risk are measuring social withdrawal, monitoring sleep, analyzing substance use patterns, tracking stressful life events, and monitoring for preparatory behaviours. Some of these trials have also incorporated the use of wearable, smart technology (Esmaeilzadeh, 2025; Levinson et al., 2019a). Esmaeilzadeh (2025) suggests that NLP combined with social media and other communications data could provide 24/7 monitoring for suicide risk (Esmaeilzadeh, 2025).

While Esmaeilzadeh's (2025) review paper provides an interesting and exciting broad overview of how AI is being explored for suicide detection and prevention, it does not elaborate on efficacy or reliability of such tactics. Many limitations to the technology are noted, and the author highlights ethical and regulatory frameworks as essential to implementing any such technologies in the real world. This research illuminates some of the future possibilities for NLP to alert on suicide risk, but it cannot be considered empirically sound evidence for any of these technological innovations at this stage. Ongoing assessments for suicidality and risk are an

important part of ethical clinical practice, and language may be an important indicator. Any tools that can help counsellors with this process may be worth exploring further.

Therapeutic Approaches for Anorexia Nervosa

An understanding of key treatments for AN is important for anyone working with this population, and for exploring how GenAI might support or enhance interventions for recovery. The following section describes some common, empirically supported treatments used for AN, though it is not an exhaustive list. First, inpatient treatment practices for AN will be described and critically analyzed. Next, cognitive behavioural therapy, exposure therapy, and narrative externalization are discussed and a review of possible areas for growth in each approach is described. This section of the literature review provides contextual background for a discussion on how GenAI might augment these modalities to address gaps or create efficiencies in treatment.

Inpatient Treatment for Anorexia Nervosa

Inpatient programs are recommended to help stabilize patients and provide round-the-clock support in severe cases of AN, and for those who do not respond in outpatient settings (Webb et al., 2024). These programs often use manualized cognitive behavioural therapy (CBT) in order to create disruptions in disordered thoughts and behaviours, and encourage the normalization of eating and weight gain (MacDonald et al., 2020). Inpatient treatment often involves refeeding/nutritional rehabilitation mixed with CBT and includes the incorporation of a wider variety of foods and discussions of food rules and beliefs (Bargiacchi et al., 2019; Webb et al., 2024).

Areas for Growth in Inpatient Treatment for AN. Wait times for inpatient treatment may vary, and this may offer an opportunity for innovations that leverage new technologies. A

recent qualitative study by Armour et al. (2024) asked Canadian adults about their experiences with inpatient treatment and found that some people waited up to 15 months between referral and admission. All 10 participants in this study noted that their symptoms increased and health decreased during their waiting period to get into inpatient treatment (Armour et al., 2024). Armour et al. (2024) also note that rigid eligibility criteria and geographical location were barriers in seeking access to inpatient treatment. While this study only included qualitative interviews with 10 people, it demonstrates some of the barriers that might be areas for improvement in inpatient settings.

Some participants in Armour et al.'s (2024) study reflected feelings of not feeling sick enough to enter a hospital environment. This is reflects a common belief in people with AN, who can sometimes deem themselves undeserving of serious and hospital-based treatments (Eiring et al., 2021; Gaudiani, 2018). This belief also appeared in an earlier qualitative study by Eiring et al. (2021), who interviewed seven Norwegian, female adults who had recovered from AN or AAN. All seven of these women reflected the same feeling of needing to embody a certain level of sickness to seek treatment. They felt that they needed to look sick, and that their appearance and weight loss was one way to prove to the medical community and to their families that they were sick (Eiring et al., 2021). These studies suggest that internalized feelings about what sick looks like might be a barrier to treatment, and that pressures to embody sickness in AN might actually undermine recovery until people are medically unstable. Chapter three will explore ways that AI might be used to objectively demonstrate the impact of AN and AAN despite body size and preconceived notions of what someone with AN looks like.

Armour et al's (2024) study demonstrates how internalized stigma can play a role in how people with AN feel about entering treatment. Some participants in the study reported that

hospital treatment plans lacked sufficient individualization, suggesting a limited degree of personalized care (Armour et al., 2024). One participant said that treatment approaches felt cold and inhumane at times. As noted above, manualized CBT is often used in inpatient environments. AI may be one area that could support individualization in CBT-based inpatient settings.

Both Armour et al. (2024) and Eiring et al. (2021) are qualitative studies, which means a wealth of rich description is available. At the same time, comments from these study participants may not be reflective of all people with AN or AAN. Additionally, there is limited diversity in both studies, with all but two of the 17 total participants being female. All participants in Armour et al. (2024) were white, and race and ethnicity were not disclosed in Eiring et al. (2021). While quantitative data could enhance generalizability and support broader conclusions, these topics may be inherently challenging to measure using quantitative methods alone. Recruiting a large and diverse sample of individuals with AN requires that participants self-identify as currently experiencing, or having previously experienced, AN. Stigma surrounding eating disorders may discourage individuals from disclosing their experiences, even in anonymous research settings. As well, those who don't feel sick enough to seek treatment could be excluded entirely from purposefully selected clinical samples. As a result, studies that rely primarily on treatment-seeking populations risk overlooking a significant segment of individuals with lived experience of AN, particularly those who have not accessed clinical services or who present with atypical or subclinical symptoms.

Cognitive Behavioural Therapy for the Treatment of Anorexia Nervosa

Cognitive behavioural therapy has the largest body of research for treating adults with AN (MacDonald et al., 2020). As discussed above, CBT is often used in inpatient treatments,

typically in conjunction with nutritional rehabilitation and with other supports. In addition to its use in inpatient programs, CBT has been shown to be helpful in AN outpatient recovery. Russell et al.'s (2023) rapid review found that studies consistently demonstrate that CBT helps people with AN create greater emotional regulation, improve disordered thoughts and behaviours, and lower overall EDE-Q scores. They also found that CBT in conjunction with nutritional rehabilitation helps to increase BMI, which was a frequently used efficacy measure in studies on CBT for AN (Russell et al., 2023).

Duggan et al. (2025) conducted a systematic review of outpatient CBT for AN and found an overall medium-large effect size for AN symptom improvement and for secondary outcomes such as anxiety, depression, and quality of life. They found that it was effective for outpatient treatment of AN regardless of weight, age, and illness duration (Duggan et al., 2025). All people in the studies included were either clinical, or, if classified as subclinical, were underweight. This means that people with AAN are not included in this review. Of the 26 quantitative studies used in Duggan et al.'s (225) review, 24 used a CBT manual in planning and executing CBT interventions, 16 of which used the Cognitive Behavior Therapy for Eating Disorders (CBT-E) manual (Duggan et al., 2025; Fairburn, 2008). CBT-E was initially developed to treat BN, and is now commonly used for eating disorder treatment in both inpatient and outpatient settings (Atwood & Friedman, 2020). It typically consists of 20 – 40 sessions over several months, and aims to change dysfunctional cognitive structures such as an over-emphasis on shape and weight related to self-evaluation, perfectionism, mood intolerance, and low self-esteem (Fairburn, 2008; Fairburn et al., 2003). These four structures comprise the shared pathologies across all eating disorders, according to Fairburn's Transdiagnostic Theory of Eating Disorders (2003, 2008).

A manualized treatment approach can be considered a strength in studies such as those in Duggan et al.'s (2025) systematic review. The manual creates consistency in implementation across participants, and comparing studies that use this manual improves comparability. Manualized CBT-E has been shown to be effective in previous systematic reviews that examine its use for an array of eating disorders (e.g. Atwood & Friedman, 2020; Dahlenburg et al., 2019), but Duggan et al.'s (2025) study provides specific evidence for its use with AN. A drawback of this study is that some of the studies are old, dating back to 1998. Six of the studies are from 2013 or earlier, which means the DSM-IV would have been used for diagnostics.

Areas for Growth in CBT Approaches to AN. Kessler et al. (2022) tested CBT-E over the course of 40 sessions for 33 Norwegian adults with AN, and used the EDE-Q and BMI as indicators for patient change over the course of treatment. While they did find that CBT-E was effective and acceptable for most patients, they also note that the dropout rate was 67% (Kessler et al., 2022). The authors suggest that individualized treatment might be an important enhancement for manualized CBT-E models in the treatment of AN, and that future iterations of CBT-E might benefit from including more practitioner support tools for handling comorbidities (Kessler et al., 2022). Frostad et al. (2021), also experienced high dropout rates in their study of CBT-E for AN. This study was also conducted in Norway, and they recruited 21 people with severe or extreme AN according to the DSM-TR-5, which means they had a BMI of 15.99 or lower (American Psychiatric Association, 2022; Frostad et al., 2021). The study design provided CBT-E treatment on an outpatient basis and reported that 54% (11) of participants dropped out. Among those who completed the CBT-E treatment, 80% had increased their BMI to a non-clinical levels (>18.5) one year post-treatment, compared to 55% of those who did not complete the full course. People who dropped out were similar to those who completed the treatment

program in BMI, disorder duration, psychiatric comorbidities, number of prior AN treatments, and key demographics, which suggests that there was another unknown reason as to why these 11 people dropped out. Although neither Frostad et al. (2021) nor Kesler et al. (2022) aimed to measure dropout rates, the findings are relevant when considering barriers and gaps in CBT treatment for AN. Unfortunately, neither study collected qualitative data, so no conclusions can be made about the reasons for dropout.

A small feasibility study by Hamatani et al. (2022) recruited 13 Japanese women with AN to participate in an internet-based CBT-E program. They used a series of 12 modules which they accessed on a self-serve basis and followed each session with a chat-based interaction with a CBT therapist to report their experience using the modules. While these results are too small to be generalized to a larger population, this demonstrates that more studies using technological advancements might be warranted.

Researchers often rely on control groups RCTs to evaluate the effectiveness of therapeutic modalities, but non-treatment controls are not recommended for people with AN since this disorder can carry significant health risks (Gan et al., 2022). In some RCTs, CBT is used as a control, which can make it hard to validate CBT independently (Gan et al., 2022; Solmi et al., 2021). CBT protocols for treating AN could benefit from innovations that isolate specific outcomes related to CBT interventions.

The long-term effectiveness of CBT for AN appears to be unclear (Russell et al., 2023). According to a rapid review by Russell et al. (2023), long-term recovery rates are substantially lower than short term rates. This means that there is a possible gap in recovery maintenance, and relapse prevention may be an area for growth in CBT for AN. As well, treatments lasting more than six months have been shown to be more effective than shorter durations (Gan et al., 2022).

Several of the articles reviewed in this section use quantitative approaches to inquiry. Qualitative reviews of CBT for AN might illuminate patient experiences during treatment and be helpful in noticing gaps in treatment. No current research could be found combining GenAI, CBT, and AN. An exploration of possible avenues will be discussed in chapter three of this capstone.

Emotional Dysregulation and Alexithymia in AN. CBT-E does not have a focus on emotional dysregulation (Riddle et al., 2023), yet emotional dysregulation is common in all eating disorders including AN when compared to healthy controls (Brockmeyer et al., 2014). In a quantitative study of 120 women with eating disorders including 77 women with AN, Brockmeyer et al. (2014) found that people with AN have difficulty distinguishing emotions and have trouble modulating emotions. This study used only females aged 17 – 61, and most of the women were white, so generalizability is questionable. As well, it is possible that participants were at varying stages in their treatment and recovery, which may impact their levels of emotional dysregulation and symptomology. Despite these limitations, Brockmeyer et al. (2014) shows that CBT-E might be enhanced with emotional dysregulation interventions.

Alexithymia, which is associated with emotional dysregulation, is common in people with AN, yet little research about how to identify and account for its presentation in treatment for AN (Gramaglia et al., 2020). In their scoping review, Gramaglia et al. (2020) found that alexithymia levels often remain high in individuals with AN post-treatment, despite improvements in other areas such as BMI and eating behaviors. Of the 10 studies used in their review, five used CBT-based approaches. Due to a lack of studies available that measure both alexithymia and AN outcomes, the researchers could not draw clear conclusions about which treatment modalities were most or least effective. One notable outcome of Gramaglia et al.'s

(2020) study was that individual treatment formats seemed to be reduce alexithymia more than group formats.

In order to increase comparability and consistency in their meta-analysis results, Gramaglia et al.'s (2020) review only used studies which employed the Toronto Alexithymia Scale (TAS). The TAS is a self-report scale that has been used for 30 years, and was reviewed to confirm its reliability and validity as recently as 2020 (Bagby et al., 2020). CBT-E for AN might be enhanced by incorporating elements that improve emotional awareness, which may help address alexithymia for a more holistic approach to AN recovery. Emerging technologies could support this development, as some studies involving AI-based CBT chatbots have begun to integrate techniques for managing emotional dysregulation into their programming (Mitsea et al., 2023).

Exposure Therapy in the Treatment of Anorexia Nervosa

Exposure therapy is a behavioral intervention aimed at targeting fear structures by increasing tolerance for anxiety-inducing situations and feared outcomes (Garner et al., 2021). The process of change in exposure therapy is often explained through the inhibitory learning model, which suggests that fear does not need to be eliminated for exposure to be effective (Garner et al., 2021). Instead, exposure provides opportunities to learn that feared outcomes may not occur, to experience alternative outcomes, and to learn that anxiety can be safely tolerated (Garner et al., 2021; Jacoby & Abramowitz, 2016). The process of integrating this new information disconfirms and contradicts existing fear structures, and allows for tolerance and change (Dewan et al., 2018; Garner et al., 2021). Exposure therapy is most often conducted as in vivo exposure, in which individuals face feared stimuli in real life, or as imaginal exposure, which leverages the patient's imagination to induce fears (American Psychological Association,

2017). Exposure interventions that have been studied and applied to AN treatment of AN include food exposure, mirror exposure, and virtual reality exposure.

Feared Food Exposure for AN. Food exposure is a behavioural intervention that aims to reduce eating anxiety by having clients confront feared foods, while challenging maladaptive and dysfunctional beliefs (Levinson & Byrne, 2015). It typically uses a hierarchy of feared foods, and through this exposure to feared foods, individuals learn to tolerate their anxiety and experience outcomes that contradict expected and feared food and body related outcomes (Butler & Heimberg, 2020). These interventions have been shown to reduce mealtime anxiety which can also result in caloric increase and weight gain (Butler & Heimberg, 2020). Some researchers have suggested that improved self-efficacy is a possible secondary outcome that benefits recovery, because it is helpful in confirming the individual's capacity to recover and is possibly helpful in long term changes (Butler & Heimberg, 2020).

A recent quantitative study by Vanzhula et al. (2023a) highlights the one application of food exposure for the treatment of AN. In this study, 128 inpatient participants including 78 with AN, created a hierarchy of foods and worked with a practitioner to incorporate these foods into their diet, while also rating their anxiety and distress. The study found a correlation between an increase in variety of foods consumed and a decrease in self-reported overall food and eating anxiety (Vanzhula et al., 2023a). Vanzhula et al. (2023a) suggest that the exposure to food reduced anxiety, which in turn increased the variety of foods that they could safely consume. The resulting reduction in anxiety made mealtimes more tolerable in general. They also found that patients felt more empowered to make choices about the foods they wanted to try within treatment, and posited that this sense of agency could help them to maintain healthy eating behaviors after discharge (Vanzhula et al., 2023a). This suggests that exposure to feared foods

can result in a dietary variety for people with AN, and that this could improve overall symptomology.

Vanzhula et al.'s (2023a) study garners reliability and validity by using standardized and well accepted questionnaires, such as the EDE-Q and the Beck depression inventory scale. The authors also used the eating disorder recovery self-efficacy questionnaire (EDRSQ), which has been shown to exhibit reliability and good convergent and predictive validity (Pinto et al., 2008; Vanzhula et al., 2023a). A potential weakness of this study is the use of a self-constructed measure called the food anxiety questionnaire (FAQ), which the researchers used to identify foods that triggered higher levels of fear, anxiety, and avoidance in patients (Vanzhula et al., 2023a). This means that patients created their own scales, which individualized the treatment, but may not be comparable to data from other patients. Since this study did not include a control group and because participants were receiving multidisciplinary treatments via inpatient treatment, symptom improvements cannot be solely attributed to food exposure. There is also no record of patient follow up, so it is impossible to validate Vanzhula et al.'s (2023a) prediction that agency and empowerment in food choices were helpful post-treatment. This intervention engaged people in a hospital setting for their sample, which may lack generalizability to outpatient and subclinical individuals. The intervention might also be difficult to replicate outside of a regimented treatment centre. For example, exposure to all foods on a fear hierarchy might not be possible due to geographical, financial, or cultural challenges. An exploration of how innovations in AI technologies might facilitate some of these challenges will be explored in chapter three.

Body and Mirror Exposure for AN. Mirror exposure is an intervention sometimes used for eating disorders to challenge discomfort with viewing one's body. These interventions

typically ask patients to view themselves in mirrors or through virtual reality, and exposure is sometimes accompanied by non-evaluative or positive statements. The purpose of this intervention is to increase tolerance for viewing oneself, to build positive sentiment, and to encourage realistic estimations of body size and shape (Butler & Heimberg, 2020; Griffen et al., 2018). This is intended to target disturbances in how one perceives their body or shape, which is a criterion for AN diagnosis in the DSM-5-TR (American Psychiatric Association, 2022).

In a systematic review of exposure therapy for eating disorders, Butler and Heimberg (2020) demonstrate positive empirical evidence regarding body-based exposure for the treatment of AN. However, studies that have tested mirror exposure often seem to engage patients with a range of eating disorders, not exclusively those with AN. For example, Trottier et al. (2015) conducted a quantitative study with 45 Canadian women with eating disorders, and they were provided with therapist-assisted mirror exposure. The mean results showed medium to large effect sizes for improvements in body avoidance behaviours, body checking behaviours, and a reduction in overevaluation of weight and shape (Trottier et al., 2015). However, only 12 of these women had AN. This suggests mirror exposure shows possible transdiagnostic efficacy in eating disorder treatment, but more research is needed to identify specific opportunities and pitfalls for those with AN. For example, researchers have stated a reluctance to implement mirror exposure for people with significantly low weight, due to concerns that repeated exposure to their underweight bodies may lead to habituation or reinforcement of an unhealthily thin appearance (Griffen et al., 2018; Morgan et al., 2014). All studies included in Butler and Heimberg's (2020) review that used mirror exposure for AN included solely weight-restored individuals. This may be an area for further research and qualitative inquiry.

Tanck et al. (2021) conducted a study in Germany to explore positive mirror exposure for people with AN. This therapist-guided intervention combines mirror exposure with positive body-related affirmations. For this study, Tanck et al. (2021) engaged 47 women, 29 of whom had AN and 19 of whom had BN, and found that all participants showed symptom improvements after the course of treatment (Tanck et al., 2022). People with AN showed large effect sizes in eating concerns, weight concerns, and shape concerns, and medium effect sizes for drive for thinness and body avoidance. Body dissatisfaction and body checking showed only negligible improvements post-intervention, which may be an area for future exploration. This study did not include any follow-up measures, so it is not possible to draw conclusions about long-term efficacy. There was no control group, but as noted in the CBT section of this capstone, RCTs without a control treatment are not recommended for people with AN. Some people in this study had significantly low bodyweights at the start of treatment, and the results showed a mean BMI increase for the AN subgroup. This may suggest that habituation and reinforcement of patients' small body size did not occur, as has been previously predicted. However, at an inpatient treatment centre and received multidisciplinary treatments concurrently. It is impossible to attribute the effects entirely to the exposure therapy intervention, and it is likely that many interventions aimed to increase BMI.

VR Exposure Therapy for AN. Virtual reality (VR) exposure therapy has been shown to straddle the line between in vivo and imaginal exposure techniques, and has been successful in trials for people with a variety of eating disorders including AN (Clus et al., 2018; Magrini et al., 2022). Virtual food and spatial experiences have been shown to induce the same degree of emotional responses as in vivo tests and have been shown to produce similar results for people with AN (Riva et al., 2021). People with AN sometimes experience difficulty with interoceptive

awareness and multi-sensory experiencing due to their constant suppression of needs including hunger and rest (McBride & Kwee, 2019). VR exposure has been shown to help people with AN understand the link between body distortions and interoception (Magrini et al., 2022), and it may have an added benefit of providing safer interactions with feared stimuli (Clus et al., 2018). VR and digital practices may also ease discomfort in clinicians, who sometimes feel nervous or skeptical about causing patient distress during exposure interventions (Meyer et al., 2014). While VR is an exciting area of development, it can be extremely expensive, and researchers typically need their own software in order to conduct studies (Riva et al., 2021).

Areas of Growth in Exposure Approaches to AN. Research shows potential and efficacy for exposure therapy in the treatment of AN, but some have suggested that it is misunderstood and underused by clinicians (Becker et al., 2022; Butler & Heimberg, 2020). Essayli et al. (2020) posited that exposure therapy is underutilized in eating disorder treatment, and suggested that this is partly due to clinicians' beliefs that clients will dislike the approach. Practitioner hesitation may stem from fears upsetting clients or exacerbating symptoms, vicarious trauma, concerns that the experience will lead to treatment drop out, and litigation (Brown et al., 2020; Garner et al., 2021). Supporters of exposure therapy suggest that this perspective is inflated and assert that there is no evidence suggesting that dropout rates are any higher than non-exposure CBT (Asnaani & McLean, C., 2017; Garner et al., 2021). This represents a potential area for growth, with technological innovations offering a promising path to increase the adoption of exposure therapy for AN among clinicians. This will be further explored in chapter three of this capstone.

Externalization in Anorexia Nervosa Counselling

Externalization is an intervention that can be used integratively within an array of modalities and theoretical frameworks (Cripps et al., 2024). It is a process by which clients use imagery and metaphor to conceptualize problems, thoughts, feelings, or other important elements of their experience (Haber et al., 2025; White & Epston, 1990). It is a common intervention used in narrative therapy, but is also used in family-based therapy and CBT for the treatment of AN (Cripps et al., 2024).

Externalizing thoughts, feelings, or aspects of the inner psyche helps clients view them as separate from themselves, which can reduce the emotional burden of discussing them in therapy (Haber et al., 2025). Some people describe experiencing AN as an internal 'voice' and both the content and the relationship with the voice can affect how people experience their disorder (Pugh & Waller, 2017). In AN treatment, this practice involves separating the eating disorder from oneself and picturing it as an external, separate dimension of the self (Cripps et al., 2024). Externalization has been shown to be a helpful tool as part of AN treatment (Cripps et al., 2024; Pugh & Waller, 2017).

In a narrative review of 14 studies identity focused interventions in the treatment of AN, Croce et al. (2024) found that these framework were helpful in recovery. According to this review, researches have consistently found that identity disturbance is likely a perpetuating factor in AN, and a summarization of primary data in this review show that clients can benefit from clinical practices that integrate new ways of understanding one's core self (Croce et al., 2024). Qualitative studies show that people sometimes experience a loss of self to AN, and some study participants have reported that they view themselves as "anorexic above all else" (Croce et al., 2024, p. 4). Externalization is one intervention that can help people reclaim the non-AN part

of themselves, because it allows clients to feel differentiation from their problems, feelings, or from the disorder itself. Externalization may help with reidentifying a core version of the self, which can help to promote agency and autonomy over the disorder and lead to improved experiences in recovery (Croce et al., 2024; Voswinkel et al., 2021). Using externalization to help reimagine identity in this way has been shown to be helpful in the treatment of AN (Croce et al., 2024; Pugh & Waller, 2017).

Croce et al.'s (2024) review used qualitative research articles and conducted a thematic analysis to explore identity and externalization in AN. While the qualitative data offer valuable insights for clinical practice, this area would benefit from larger quantitative studies to assess efficacy more robustly. The reviewed studies employed inconsistent measurement tools, potentially affecting reliability and limiting the potential for future quantitative synthesis. The authors also highlight a lack of cultural and gender diversity in these studies, with most samples consisting of white females. Furthermore, while the review examined identity frameworks in AN counselling, it did not focus specifically on externalization. Although identity-based approaches appear helpful in AN recovery, the findings do not establish whether externalization is more or less effective than other identity-focused interventions.

Croce et al.'s (2024) narrative review highlights the need for further research into identity reauthoring in anorexia nervosa (AN), with externalization identified as one potential strategy. However, research has suggested nuances to client acceptability for this approach. Cripps et al. (2024) asked 13 British adults with AN about their experience of externalization while in treatment. They used a semi-structured interview, and all participants were white, female, and between the ages of 20 – 39. They found that externalization was only positively regarded and well accepted by patients when it felt personalized. Participants reported greater benefit when

their own language was used, rather than being required to adopt clinical terms or metaphors imposed by the therapist, because this made it feel invalidating and overly complex (Cripps et al., 2024). When externalization was introduced too early or in overly clinical terms, it was often perceived as invalidating and overly abstract.

Cripps et al.'s (2024) study found externalization to be better received later in treatment, once a strong therapeutic alliance had been established. As trust developed, feelings of invalidation decreased, allowing clients to engage more openly in abstract identity work. Participants also reported that once they felt more grounded in their recovery, externalization supported self-efficacy and identity exploration (Cripps et al., 2024). Some found value in visual representations of AN as a separate entity, but only when they created these themselves; therapist-imposed imagery was often experienced as alienating. These findings underscore the importance of tailoring externalization techniques to each client's language, readiness, and preferences, and the importance of agency and autonomy in treatment.

This qualitative reflective thematic analysis offered an in-depth understanding of participants' experiences, including opportunities for participants to review findings for accuracy. The use of rich descriptions and verbatim quotations enhances transparency, and the researchers' engagement in reflexive journaling suggests a clear effort to mitigate bias (Cripps et al., 2024).

Voswinkel et al. (2021) conducted a qualitative study similar to that of Cripps et al. (2024), and also found that patients had mixed feelings about externalization for AN. This study asked 14 Dutch, female AN patients about their experiences, and while participants reported acceptability for externalization, they also reported feeling a sense of invalidation at times. This was especially prevalent when client-counsellor alliance had not been well established

(Voswinkel et al., 2021), which mirrors findings from Cripps et al.'s (2024) study. They also found that introducing externalization too early left participants feeling dismissed, as they were still deeply identified with AN and felt frustrated when all behaviours were attributed solely to the disorder (Voswinkel et al., 2021).

Voswinkel et al. (2021) found that participants' understanding of identity shifted over the course of treatment, with AN often feeling dominant early on, and becoming more integrated as therapy progressed. Despite some negative experiences such as early discomfort with the interventions, participants generally viewed the technique as a necessary part of recovery (Voswinkel et al., 2021). This study also only used female participants, and cultural and ethic identity was not clear suggesting low generalizability. However, the rich qualitative data offer valuable insights and lay groundwork for future, larger-scale research. This level of detail may not have emerged through quantitative methods alone.

Areas of Growth in Externalization Approaches to AN. All three studies reviewed here (Cripps et al., 2024; Croce et al., 2024; Voswinkel et al., 2021) suggest that externalization is a potentially effective and feasible intervention for exploring identity in AN recovery. However, participants commonly reported negative experiences when the intervention was introduced too early, when it felt imposed or inauthentic, or when clinical language was used rather than client-generated terms and imagery. These findings point to a need for more client-driven approaches to externalization in AN treatment. Innovation and emerging technologies may be one avenue, and chapter three will explore how GenAI might support iterations of externalization interventions in AN treatment.

Summary

This literature review has demonstrated the complex nature of AN, and the critical need for treatments that are safe and effective. Innovation in this space is not only warranted, but essential. This is the impetus for this capstone's research question: How can generative artificial intelligence support the treatment of anorexia nervosa?

To explore this question, this literature review included a brief description of GenAI, followed by a detailed synthesis of current knowledge about AN pathology and recovery. Current diagnostic and treatment practices for AN appear to have empirical support, but this review has demonstrated a plethora of gaps. AN is a dangerous disorder that is associated with many physiological risks, and high rates of death and suicide. Many professionals and nonprofit organizations predict that AN is far more prevalent than described by statistical reporting (Canadian Mental Health Association, 2014; National Initiative for Eating Disorders, 2024; Raffoul et al., 2025). As well, it is unclear whether any data exists regarding rates for AAN, a disorder which has been shown to be identical to AN in every way except for bodyweight.

Little research could be found addressing the intersection of AI and AN. This chapter has outlined several technological advancements that have the potential to improve the recovery experience for individuals with AN. For example, suicide risk and help-seeking stigma are associated with AN, and advancements in AI may have potential for mitigating some of these risks and barriers. Technological advancements such as photo augmentation apps, VR, and digital spaces have also been discussed as tools for supporting the experience of those undergoing AN treatment. Chapter three will further discuss emerging research that combines AI and psychotherapy, and will propose ways that these innovations could be explored for the treatment of AN.

Chapter Three

The purpose of this capstone project is to evaluate the potential for GenAI to support the treatment of AN. Research conducted for chapter two found that there is limited literature at the intersection of GenAI and AN. Based on this dearth of research, no conclusions can currently be drawn about GenAI's use or feasibility as a standalone modality, or as an adjunct to existing approaches for the treatment of AN. The research revealed several areas of AN pathology and treatment that may benefit from improvements and innovative approaches. This section of this capstone brings forth emerging ideas in GenAI for psychotherapy to highlight possible areas for future research. By proposing research directions, practical applications, and highlighting ethical considerations, chapter three aims to spark dialogue on how GenAI can responsibly transform the landscape of AN treatment and help to reimagine recovery.

Discussion

In the first two chapters of this capstone, the pathology and risks associated with AN have been outlined. I have described several factors that highlight the need for advancements in treatment options and the impetus of improved recovery rates. It is estimated that only about 10% of people with eating disorders will receive treatment (National Initiative for Eating Disorders, 2024), though no specific AN rates could be found. AN is associated with an array of harmful physiological risks, high levels of death and suicide, and is highly comorbid with other mental disorders (Hambleton et al., 2022). The risks of restrictive eating affect people in all bodies, and AN and AAN have been shown to be more similar than different in terms of their pathology (Sandoval-Araujo et al., 2024; Walsh et al., 2023). Treatment planning for these disorders should consider people of all body sizes.

A common rhetoric and misconception about AN is that it only affects young, white, females (Rodgers et al., 2018). In fact, research shows that all ages, cultures, and genders are at risk of developing AN. Gender diverse, non-binary, and trans individuals may have a higher risk of developing AN that people who are cis-gender, and inclusive and gender affirming practices may be an integral part of AN recovery (Avila et al., 2019; Diemer et al., 2018). The stigma associated with AN can act as a barrier to seeking treatment, and this may be especially true for people with cultures, bodies, and genders that do not match prevailing stereotypes (Aird et al., 2025; Dimitropoulos et al., 2016). Innovations that bridge these gaps are critical to reaching the diverse range of people affected by this debilitating and life-threatening disorder.

Although many modalities and theoretical lenses have been applied to the understanding and treatment of AN, behavioural therapies are the most studied (Russell et al., 2023). The prominence of behavioral approaches is likely due to the critical importance of addressing food-related behaviors and nutritional rehabilitation, which are foundational to both physical and psychological recovery (Gaudiani, 2018). Put simply, individuals who are not eating enough may lack the cognitive and emotional capacity to fully engage in other forms of therapy. While this does not diminish the value of other interventions, it underscores the central role of behavioral change in the recovery process, a focus that informs the direction of this capstone project. Counselling and psychotherapeutic approaches for AN include both in-patient and outpatient methods. In-patient settings often use multi-disciplinary approaches, including nutritional rehabilitation (Armour et al., 2024). Outpatient approaches commonly incorporate behavioural interventions to help stabilize the health of the individuals, and to normalize eating in parallel to other treatments such as cognitive restructuring and explorations in identity.

Khalsa et al. (2017) conducted a systematic review of 27 studies examining treatment outcomes for AN. They found that relapse rates for AN ranged from 9% to 52%, and the majority of the studies reported relapse rates of 25% or higher (Khalsa et al., 2017). This study included articles dating back as far as 1975, however, pointing to a lack of current research. The outdated and limited nature of data on this topic suggests that more research is required. At the same time, relapse rates this high suggest that post-treatment support for AN could benefit from improved and innovative approaches (Duggan et al., 2025).

Researchers have pointed to significant treatment gaps that harm people with AN, such as long waitlists that lead to worsening conditions, and an overall lack of clarity about the long-term efficacy of treatment (Armour et al., 2024; Russell et al., 2023). Stigma may prevent some people from seeking help, and medical and systemic bias may also act as a barrier for some individuals (Eiring et al., 2021; Moreno et al., 2023). People with larger bodies may not be viewed as sick enough to warrant crucial help that they need, and this may further cement internalized shame and stigma about their eating disorders (Eiring et al., 2021; Gaudiani, 2018).

AN is serious and life-threatening for those affected, and the development of inclusive, accessible, and barrier-free treatments is essential for improving outcomes. CBT, exposure therapy, and externalization have been shown to be effective in the treatment of AN, but each presents limitations and areas that may benefit from further innovation and refinement. In the next section, I will introduce emerging ideas and current literature related to AI in psychotherapy and offer directions for future research at the intersection of GenAI and AN.

Application: Research Directions and Ethical Guidelines

Building on the literature and noted gaps in AN treatment from chapter two, this section proposes research and practice strategies that leverage current AI developments to support the treatment of AN. I acknowledge several important limitations in this discussion, most notably the lack of empirical evidence supporting AI-based interventions in psychotherapy. Some of the insights presented are drawn from pilot studies, whose findings must be replicated and standardized to ensure reliability and validity before firm conclusions can be drawn regarding their effectiveness, acceptability, and safety. The incorporation of AI in psychotherapy raises significant ethical considerations, some of which will be described here. Further research is needed to identify more of these ethical implications, and policies and best practices are needed as AI moves from research to practice. This paper does not serve as a clinical guide for using AI in counselling practice; rather, the examples provided are intended to spark ongoing dialogue about how GenAI might support the treatment of AN.

Improving Access to Treatment for AN

The following sub-sections describe areas of AN diagnostics and pathology that may benefit from innovations in GenAI. Each area was explored during the literature review for this capstone, providing the foundation for this discussion.

Weight and BMI as a Data Point Bias. As described in chapter two, ML algorithms found that the pathology of AN and AAN is indistinguishable when BMI and weight are removed as a data point (Crumby et al., 2024; Sandoval-Araujo et al., 2024). AI-based algorithms may offer a more objective way to identify pathology in people who may be overlooked due to medical or systemic biases. This may improve access to treatment and mitigate some opportunities for biases in diagnosis. As GenAI continues to develop, insight may

be garnered from analyzing the impact of weight and body size as an inclusion factor for AN screening, and AI-based monitoring may help to better understand the experience of people with AAN. This could lead to improvements in individualized and personalized approaches to treatment.

Stigma and Help-Seeking Behaviour. Stigma can act as a barrier to seeking mental health support and some researchers suggest that AI may help reduce these obstacles (Rowshon et al., 2025). The anonymity and privacy inherent in many AI-based tools may help individuals who worry about disclosing AN to friends, family, or professionals by offering new ways to communicate and to seek support. Help-seeking stigma behaviours have been found to be especially high in adolescents and young adults (Hoffman et al., 2024). In their study of attitudes towards AI chatbots in mental healthcare, Hoffman et al. (2024) found that young adults with high levels of self-stigma toward human interventions (i.e. those unlikely to seek traditional mental health support) were more likely to view therapeutic AI options, such as chatbots, in a positive light. Young adults who had lower levels of stigma around human to human therapy (i.e. those likely to seek traditional mental health support) viewed AI more negatively (Hoffman et al., 2024). These findings suggest that GenAI-based therapies may bridge the gap for people who feel higher levels of stigma as a barrier to seeking support from humans.

Mitigating Geographical and Financial Barriers to Treatment. A major advantage of GenAI in psychotherapy is its capacity to offer continuous access to support regardless of geographical location and time of day (Fardouly et al., 2022; Hoffman et al., 2024; Rowshon et al., 2025). Researchers have suggested that AI can reduce the financial burden of therapy (Rowshon et al., 2025), and that AI-based bots can provide companionship for people who have issues with getting access to support due to time, privacy, or lack of transportation (Singh, 2023).

For people in remote locations or who have busy schedules that may not accommodate traditional models of care may benefit from advances in GenAI and other virtual options for AN therapy.

These advancements, however, also introduce new barriers. Infrastructure requirements including hardware, software, and reliable internet connectivity may limit access to future offerings of AI-based AN treatment services. Cultural and individual differences in ability may impact acceptance and usage, highlighting the need for inclusive and universal design. Some virtual tools may require private or soundproof space, which may not be available for some individuals. Furthermore, limited technical literacy may exclude some individuals from effectively engaging with GenAI-based tools, and different age groups may vary in their comfort with technologically adapted approaches to AN treatment. Research is needed to guide the development of GenAI-supported AN interventions that are accessible, inclusive, and adaptable to diverse user needs.

Gender Identity, GenAI, and AN. Research summarized in chapter two demonstrates that sexual and gender minority individuals are more likely to develop eating disorders and to report behaviours consistent with AN pathology than cis-gender and heterosexual people (Kerr et al., 2024; McGregor et al., 2023). Gender affirming spaces provide safety and inclusivity for people with AN, and Canadian counsellors have an ethical duty to continually enhance their diversity awareness and provide equitable and socially just care for clients (Canadian Counselling and Psychotherapy Association, 2020). Online spaces have been shown to be valuable for the exploration of gender identity, and this is an area that may benefit from further research as GenAI technology evolves (Brownstone et al., 2025; Herrmann et al., 2024; Miltner, 2024). For example, the use of photo filter and video apps, dynamic virtual spaces, and GenAI

avatar creation may be some ways that these technologies can increase gender affirming approaches in AN treatment (Brownstone et al., 2025; Herrmann et al., 2024; Miltner, 2024).

While these approaches to digital gender exploration warrant further research, it is important to note that GenAI technologies also pose risks related to gender and safety. GenAI filters increase the risk that predators on the internet can camouflage themselves, and this could be dangerous for the wellbeing and safety of vulnerable individuals (Pendergrass, 2023). The ability to tell real people from GenAI creations may become increasingly difficult, and this could introduce risk for people sharing private information, including in the mental health context. While there is evidence that internet forums can feel like respite for some marginalized people (Austin et al., 2020; Brownstone et al., 2025), GenAI also offers the opportunity for imposters to infiltrate therapeutic settings and sabotage the experience for genuine participants. Research, policies, and authentication tactics should be explored.

GenAI and Inpatient Treatment

Inpatient treatment is common for severe cases of AN, but some key issues were discovered in the literature review of this capstone. These include long wait times, a lack of personalized support, and a sense that one must become even sicker between referral and admittance to justify access to these services. People who located in remote areas may also have difficulty attending in-person facilities. Advancements in GenAI may support a more adaptive approach to inpatient and round-the-clock treatment, provide interim support, and improve individualization of treatment practices. GenAI may also support the transition between home and hospital, and back again upon discharge.

Wait Times: Bridging the Gap Between Referral and Admittance. Research shows that some Canadians will wait for more than a year to enter inpatient treatment for AN (Armour

et al., 2024). During this time, it is possible that symptoms will worsen and intensify, both physically and psychologically. The body of AN research may benefit from explorations of GenAI as a tool to bridge the gap between referrals and admission for inpatient treatment of AN.

Machine learning and data analysis may be able to provide insight on changing risk levels in patients, and AI-supported monitoring tools may help clinicians and administrators notice worsening conditions that necessitate the prioritization of a patient's admittance. Researchers have been exploring the use of wearable and sensor technology in the treatment of AN (Almenara et al., 2022; Levinson et al., 2019a). Such technologies can provide health informatics such as sleep-wake patterns, heart rate variability, and physical activity levels. When combined, these data may offer valuable insights into a patient's condition and support clinicians in identifying when interventions are needed to prevent further deterioration (Eiring et al., 2021).

While this integration of hardware and GenAI based software may provide helpful information to care teams, wearable technology also comes with significant risk. Wrist bands and other monitors may provide people with AN with real-time feedback about their activity level and calorie burn, and this could incentivize patients to engage in compensatory activities or to work towards becoming sicker prior to admittance. Risks and benefits, as well as safeguards should be explored in future explorations of this technology in research and in practice.

GenAI may also provide interim care solutions that support patients while they await clinical services, or once they are discharged. This may reduce the risk of worsening symptoms in the time between referral and admittance or mitigate risk of relapse. Specific recommendations as to what such interim care might look like are not within the scope of this capstone paper, but some examples that could be explored include GenAI-supported psychoeducation modules, online forums, or virtual meeting spaces.

Individualization and Personalization. Clients have noted that treatment at inpatient centres can feel cold or inhumane at times (Armour et al., 2024). Manualized approaches to AN treatment are often used at inpatient centres, and while this can be helpful for maintaining consistency and for comparing outcome data, it may also amplify this reported sense of impersonalization and coldness (Kessler et al., 2022). By its very nature, GenAI is designed to customize its output based on prior learning (Lv, 2023). Including GenAI in future research for inpatient and manualized approaches may support changes that increase feelings of individualization and responsiveness. Practically speaking, by using ML algorithms to analyze patient data, GenAI may be able to create treatment plans based on NLP and decision-tree models that incorporate adaptations to the unique experience of each person. For example, if a particular word such as 'lonely' is repeated in charts several days in a row, data analysis could predict that this client needs interpersonal interventions added to their treatment plan. Please note, this is not a clinical recommendation or an evidence-based suggestion; it is simply an example of how I believe such technology may help in these situations. Researchers could explore GenAI as a tool to support more individualization for these environments, and ML may help detect treatment effects and support improvements for inpatient treatment.

GenAI and CBT

The literature review in chapter two of this capstone revealed several areas for potential enhancement when treating AN with CBT. This section explores some of CBT's limitations and suggests opportunities for GenAI research. This may include augmentations for specific interventions, applications to be used in between treatment sessions, improved data analysis and participant recruitment, and more. Enhancing CBT for AN through innovative strategies that

involve GenAI could lead to improved recovery outcomes, better data, and a decreased risk of relapse.

Research Dropout Rates and Relapse Prevention. While CBT is widely recognized as a valid treatment, its overall effectiveness remains unclear. This uncertainty may partly stem from its use as a control or treatment as usual condition in studies. Non-treatment controls are not recommended for people with AN as this could result in health risks (Gan et al., 2022). High dropout rates are common in AN research. In CBT for AN, these dropout rates decrease the validity and reliability of outcomes, and contribute to a lack of clear and conclusive knowledge about CBT's effectiveness (Frostad et al., 2021; Kessler et al., 2022).

Advances in AI technology may support improved research participant retention, resulting in better and more conclusive data about CBT. Many current applications of GenAI are built to achieve marketing and sales retention goals. Data collection and ML is used to determine consumer interest and deliver custom ads to drive engagement (Hemker et al., 2021). Academic researchers could look to marketing algorithms to build models for improved participant recruitment and retention. Similar logic could be applied in supporting relapse prevention for AN, by monitoring patient engagement and delivering the right content at the right time, as marketing algorithms are trained to do (Hemker et al., 2021). The long-term effectiveness of CBT for AN is unclear, but it has been shown that treatments lasting longer than six months have had better outcomes than shorter durations (Gan et al., 2022; Russell et al., 2023). GenAI frameworks similar to the marketing models described above may be useful in elongated treatment and reengaging patients to improve outcomes. Significant research is needed to explore these possible avenues, and privacy and data sharing may be of particular concern.

CBT Chatbots as Interim Support. Chatbots may evolve to become low-cost and accessible support tools. Some academics believe that GenAI chatbots have the potential to supplement care worker shortages and reduce loneliness (Pataranutaporn et al., 2021). As of 2020 more than 40 chatbots for mental health had been documented by researchers, and these chatbots are frequently designed using CBT principles (Chandra et al., 2023; Liu et al., 2022). At the time of writing, around 30% of research about GenAI in mental health has been focused on short term solutions such as live agents at chatbots (Chandra et al., 2023; Liu et al., 2022).

Bots commonly have emotional check ins, empathetic replies, and psychoeducation built into their models (Chandra et al., 2023; Liu et al., 2022). In a study of Chinese university students who self-reported anxiety and depression symptoms, Liu et al. (2022) found that a CBT bot was more effective than a course of bibliotherapy in reducing distressing symptoms. While some participants in this study found the content of the chatbot to be repetitive and impersonal, many mentioned the ease of access as its most beneficial quality (Liu et al., 2022). Results such as these suggest that GenAI-based chatbots could play a role in interim treatment for people who are waiting to enter AN recovery programs, who are in between human counselling sessions, or who are at risk of relapse.

While studies such as Liu et al. (2022) can inspire conversation about possible advances in CBT chatbots, there are many risks to be evaluated. Stories of poor interactions with AI are plentiful in the media, and later in this paper I will describe two such cases, in which chatbots have been implicated in the suicide of American teenagers. In the context of CBT for AN, the National Eating Disorders Association (NEDA)'s chatbot, Tessa, was launched and almost immediately withdrawn because of dangerous interactions (Jesudason et al., 2025). NEDA is a respected U.S.-based organization that provides screening tools, resources, research support, and

education for eating disorders (National Eating Disorders Association, 2025). Tessa was designed to provide support to people with eating disorders who were waiting to connect with a human responder on NEDA's phone and chat lines. Just one week after launch, a user disclosed an eating disorder to Tessa but also shared that they hated their body and wanted to lose weight. In response to this, Tessa provided the user with information about calorie restriction and dieting (Jesudason et al., 2025; McCarthy, 2023). This could be a detrimental experience for someone with AN, because dieting and restriction are in contradiction to recovery. As demonstrated by this interaction, clinical oversight and strong user protection levels are needed to reduce the risks associated with GenAI-based CBT chatbots. Research and safety reviews are needed in order to ethically explore chatbots for AN.

CBT Chatbots for Emotional Regulation and Alexithymia. Research shows that emotional dysregulation and alexithymia are common in AN, yet CBT-E does not incorporate mood tolerance interventions (Brockmeyer et al., 2014; Gramaglia et al., 2020; Riddle et al., 2023). CBT typically focuses on thoughts, behaviours, and beliefs that are incongruent with who a client wants to become (Duggan et al., 2025).

In a systematic review of digitally assisted mindfulness tools to support emotional regulation, Mitsea at al. (2023) found that a variety of virtual modalities have been tested and found to be acceptable and effective for research participants. These include AI-based chatbots, virtual calming rooms, virtual coaches, and brain-sensing headbands for real-time neurofeedback while engaging in mindfulness practices (Mitsea et al., 2023). Participants in these studies reported benefits such as improved emotional, cognitive, and behavioural functioning, improved self-regulation skills, and a greater satisfaction of overall mental wellness (Mitsea et al., 2023).

There are important risks to note with these technologies, which may include adverse effects like headaches, stress or anxiety, fatigue, and emotional irritability (Mitsea et al., 2023). Overdependence has also been reported, in instances where people using these technologies rely too heavily on tools to work through emotional duress rather than translating the skills they've learned to independence in decision making and regulation (Mitsea et al., 2023; Richards et al., 2023). A detailed look at this topic may be beneficial when reviewing future iterations of GenAI supported CBT tools. There may be value in adding emotional regulation and mindfulness tools to support individuals with AN who also experience mood dysregulation and/or alexithymia.

Dialectical Behavioural Therapy Chatbots for Skills Development. Chatbots and apps may also be helpful in developing behavioural skills for people with AN. In a trial using an AI-supported dialectical behavioural therapy (DBT) app for binge eating disorder, Linardon et al. (2024) found that those who used the app had reduced binge frequency and eating disorder thoughts compared to the control waitlist group. The app was developed based on dialectical behavioural therapy skills and guidelines, with a focus on mindfulness, distress tolerance, and emotion regulation (Linardon et al., 2024). Further research is warranted to explore how GenAI-based DBT practices and interventions might add skill development and mindfulness to CBT chatbots for AN.

GenAI and Exposure Therapy

GenAI and Food Exposure. Research in this capstone shows that exposure therapy can be effective for treating AN, including feared food exposure. This type of exposure aims to increase the variety of foods consumed, which has an overall positive effect on AN symptomology, and may improve self-efficacy upon completing treatment (Vanzhula et al., 2023a). Future trials could explore GenAI adaptations to facilitate food exposure once patients

are discharged, or when they are not at inpatient facilities. Gen-AI adapted VR food exposure might be helpful for people who are unable to access certain foods, or for people with extreme levels of fear around certain foods or food-related settings. As technology develops, GenAI may evolve to allow for advanced cue exposure opportunities such adding smell, texture, and taste. Adoption of GenAI exposure tools will likely depend on how cost and accessibility of the technology and hardware required for its use change over time.

Virtual Reality and Biometrics. Clus et al. (2018) describe VR exposure therapy as being able to straddle the line between in vivo and imaginal exposure. This is a potential area of expansion for GenAI technology, and an area that has garnered some interest by research teams. Combining GenAI, VR, and biometric data from sensor technology may create sophisticated and responsive environments for exposure (Almenara et al., 2022; Riva et al., 2021). For example, heart rate, perspiration, and electroencephalograms (EEG) could monitor real time AN patient distress during exposure to a VR restaurant setting, and GenAI could adapt fear hierarchies or trigger calming interventions as needed (Rahman et al., 2023). Cameras can also be used to identify facial expressions and pupil dilation, and this can be used to infer emotional state and adapt program outputs in real-time (Rowshon et al., 2025).

GenAI Enhanced Externalization for AN

Externalization can be a helpful tool for people with AN, because it helps them explore their identity in relation to their disorder (Cripps et al., 2024; Reeves & Sackett, 2021). By imaging AN or AN-related symptoms as separate from oneself, clients can build autonomy and empowerment over their AN. Sometimes eating disorders are visualized as separate entities and given names and characteristics (Cripps et al., 2024; Reeves & Sackett, 2021). This practice may be enhanced by emerging GenAI technology such as AVATAR therapy.

AVATAR Therapy for AN. Leff et al. (2014) developed the GenAI-based AVATAR therapy to embody distressing voices in people with psychotic disorders, and to help patients interact with these voices in ways that feel safer. Further iterations of AVATAR research has promoted and tested this technology for digitizing externalizations of peoples' inner psyches for other mental disorders and concerns (Haber et al., 2025; Thompson et al., 2023). The experience can feel validating and empowering. In clinical trials of people with auditory hallucinations, those who received AVATAR therapy reported greater reductions in hallucination frequency and hostility compared to those in the control group (Garety et al., 2024). In this intervention, clients work with a therapist trained in GenAI to digitally create an avatar, either human or non-human, that represents a distressing voice (Leff et al., 2014). An early value assessment from the United Kingdom's National Institute for Health and Care Excellence (NICE) has concluded that AVATAR therapy is safe and suitable for use (National Institute for Health and Care Excellence, 2024).

Thompson et al. (2023) tested AVATAR therapy for the treatment of AN by adapting the treatment manual to target distressing AN voices. Following a series of AVATAR sessions, participants reported reductions in the level of distress caused by their eating disorder voice, and reported improved self-compassion (Thompson et al., 2023). The trial did not have exclusively positive outcomes, however. AN symptoms did not improve, the frequency of AN voices did not decrease, and positive improvements to mood were negligible. AVATAR therapy for AN was generally found to be safe and acceptable for people in Thompson et al.'s (2023) study, although this case series only engaged 10 people. All but one participant rated their experience with AVATAR therapy at seven out of ten or higher; one participant rated the intervention as completely unacceptable (Thompson et al., 2023).

This initial study shows possible opportunities for AVATAR and similar therapies to be helpful for externalizing in AN treatment, but significant research is needed to determine how to improve outcomes. As noted in chapter two of this paper, some patients have reported that externalization feels disorienting or jarring when used too soon, or alienating when only clinical and therapist-generated language is used (Cripps et al., 2024; Voswinkel et al., 2021). Leveraging GenAI technology may be a way to further evolve this intervention and may offer opportunities for clients to feel in control of the images and representations that are generated to embody their AN voice.

Building Alliance by Co-creating Virtual Spaces. Externalization may also be facilitated by using GenAI-based virtual space creation. For this intervention concept, Greca et al. (2024) propose that a client and therapist could work together in building a GenAI world. Three-dimensional objects can be added dynamically based on input from the client, and these objects can be used to create comfort, or to represent ideas, memories, thoughts, or feelings (Greca et al., 2024). This may offer ways to visually represent aspects of AN that feel difficult to articulate. This co-creation of virtual space is reminiscent sandplay therapy, sometimes used with children and adolescents. While not explicitly described as externalization, sandplay uses similar concepts of metaphor and material projection to help children describe their inner worlds (Tucker & Smith-Adcock, 2017). Digital sandplay and externalization may be an interesting area of exploration and future research for GenAI-adapted AN treatments.

At the time of writing, no controlled trials using this approach were found. All authors on Greca et al.'s (2024) paper are listed as being from computer science backgrounds. Researchers interested in exploring GenAI applications in AN treatment could benefit from interdisciplinary

collaboration and should consider conducting studies to evaluate the viability, acceptability, and effectiveness of virtual world creation as a therapeutic tool.

Risks and Ethics

As various types of GenAI technologies have been introduced in this capstone, I have frequently raised concerns and risks. However, several key ethical and safety concerns regarding the use of GenAI in the treatment of AN, and in psychotherapy more broadly, warrant further attention. Suicide crisis response and GenAI-supported suicide risk assessments are included in this section. While GenAI technology offers possible support for the screening and monitoring of suicidal ideation, at this stage of development it appears to carry more risk than reward.

Other concerns discussed include embedded bias, privacy, transference, and the black box phenomenon. This is not an exhaustive list of possible risks and ethical considerations for the integration of GenAI in AN treatment, and ongoing assessment should occur as technology evolves. Following this discussion, I have provided key points of reflection for regulatory bodies and researchers who wish to explore GenAI in AN treatment.

Suicide Risk, AN, and Natural Language Processing

People with AN face an increased risk of suicidal ideation, attempt, and death (American Psychiatric Association, 2022). NLP has been used by researchers to identify words, phrases, and language patterns that are more highly correlated with suicide (Poulin et al., 2014; Tadesse et al., 2019). Existing mental health apps sometimes use NLP and decision tree models to evaluate and identify high levels of distress, and to implement therapeutic responses, such as GenAI-based CBT and mindfulness practices (Esmaeilzadeh, 2025). Despite some valuable research, and some uses of NLP in crisis settings described in chapter two, it is unclear whether AI could become a reliable method for assessing suicide risk, and whether it could respond with appropriate levels

of intervention (Fiske et al., 2019). ChatGPT 3.5, for example, was found to frequently underestimate the risk of suicide presented in user chats, especially when the risk was severe (Levkovich & Elyoseph, 2023).

Despite some potentially exciting uses for NLP in suicide risk assessment, risks and gaps remain. Emergency intervention requires accurate risk assessment, and a clear processes for escalation. More work is needed to validate the reliability of AI for assessing suicide risk, and tech companies do not seem to have clear or regulated strategies in place for crisis intervention (Esmaeilzadeh, 2025). Although this area of research is new, it appears that foundations for suicide risk assessment are in place, but many questions and concerns remain.

Suicide and Dangerous Advice. Concerns around dangerous outputs, including mental health advice, are a warranted in the discussion of AI in mental health. Counsellors in Canada have a legal and ethical responsibility to ensure the immediate safety of their clients, and to alert third parties when people are at risk of harming themselves or others (Bryce, 2014; Canadian Counselling and Psychotherapy Association, 2020).

In the case of GenAI innovations such as chatbots, it is not clear how assessment and crisis intervention is facilitated for users who are in immediate danger, or at risk of escalating dangerous behaviour (Fiske et al., 2019). There have been stories of chatbots missing opportunities to provide resources and crisis intervention, and in some cases bots have been found to encourage or describe ways that people can act on suicide (Esmaeilzadeh, 2025; Levkovich & Elyoseph, 2023).

In 2024, a 14-year-old boy in Florida died by suicide, and his mother partially attributes his death to interactions with Character.ai, a chatbot he reportedly engaged with daily in the period leading up to his death (Duffy, 2024). In another similar story, a 16-year-old boy in

California died by suicide after several conversations with ChatGPT. His interaction records show that the ChatGPT bot discouraged him from leaving a noose out in the open in his room, after he suggested would be visible to someone who might stop him. Instead, ChatGPT encouraged him to make their chat "the first place where someone actually sees you" (Duffy, 2025, para. 3). The chatbot sought to create connection with the user, and the boy's mother blames his death on this false sense of connection and the lack of crisis intervention by the bot (Duffy, 2025). but it may be hard for people to understand the nuances between authentic, human empathy, and algorithm and AI generated replicas of this empathy. In these two stories, neither of the bots used the chat information to trigger a crisis intervention or suicide prevention tactic.

It is unclear who should be held accountable for harms caused by AI technologies, such as the stories described above. In both above stories, the parents of the deceased are opting to sue the corporate entities who own and program the bots (Duffy, 2024, 2025). Mandated supervision over AI-based therapeutic tools would be a basic step towards reducing safety risks (Fiske et al., 2019). Although policies and safeguards may promote safer and more ethical uses for GenAI-based chatbots, the development of such technologies is often driven by revenue. In the future, companies may implement protective measures, and regulatory bodies may step in to dictate and monitor these measures. However, there is no guarantee that companies will abide by internally or externally determined regulations, if the cost to do so outweighs the cost of potential legal action. Governmental and counselling regulatory bodies must be actively involved in the planning and implementation of policies governing the use of GenAI in mental health contexts, including chatbots. Collaborative research between experts in technology and psychology may offer a valuable pathway toward developing more reliable and effective protective measures.

Imbedded and Systemic Bias

Human biases are transferred into AI by way of learning models, and this has the capacity to reinforce existing social inequities (Fiske et al., 2019). As such, algorithms can unintentionally reflect and amplify systemic prejudices, and in the context of AN, this could result in harmful stereotypes, discrimination, and potentially fatal outcomes (Fiske et al., 2019; Gengler, 2024). Due to poor data rooted in a lack of diversity and inclusion at the systemic level, this could mean that specific needs of marginalized groups may not be considered, and misdiagnosis of marginalized people is possible (Xian et al., 2024).

Chatbots are primarily trained using Western psychological frameworks, and as such, may not provide culturally sensitive and inclusive experiences for people from different backgrounds (Rowshon et al., 2025). Human biases may impact the standards of care for people with AN based on gender, race, age, and other sociopolitical factors, and these biases may be reflected in AI models (Rowshon et al., 2025). Speech differences (e.g. accents, ability, intonation, affect, neurodivergence, age, development differences) may negatively affect the output of NLP, and this may impact the quality and accuracy of GenAI-based AN treatments that use such technology (Elhadad et al., 2024). GenAI-based photo apps have been shown to generate images of white males when given prompts for powerful people, and have also been shown to overtly sexualize images of women, especially women of colour (Gengler, 2024). Lensa, a popular photo editing GenAI app, has been criticized for lightening peoples' skin, and shrinking their bodies in order to fit into racist, Western stereotypes of beauty (Miltner, 2024). These are examples of how big data sources can replicate systemic biases and marginalization; if GenAI tools for the treatment of AN mirror these biases, it could have alienating and harmful effects on people. To address these issues, experts recommend constant evaluation and

intentional diversification of the data used for machine learning in the mental healthcare field (Rowshon et al., 2025).

Privacy

Privacy and confidentiality are essential to therapeutic practice. Safer client spaces for all presenting concerns including AN, are established through clients' clear understanding of informed consent (Truscott & Crook, 2021). Generally speaking ML relies on an abundance of user data and the sharing of such data in order to function (Lv, 2023; Murdoch, 2021). It is possible that information could be unintentionally provided and/or collected, and the threat of re-identification of anonymized data poses a threat to client safety and privacy (Murdoch et al., 2022; Nasir et al., 2025). Clear and easily understood agreements as to how data is shared and stored should be mandated for any GenAI-based tools used in AN treatment. Limits and risks of privacy should also be clearly articulated by the creators of GenAI tools, and counsellors should discuss such risks with their clients.

Transference and Countertransference

Transference is the process by which a client unconsciously transfers emotions about others onto their counsellor (Cormier et al., 2017). Countertransference the counsellor's reflection of their own reactions and emotions onto their relationship with a client (Goldstein & Goldberg, 2004). Transference and countertransference can facilitate the use of immediacy in counselling sessions, and is an integral part of the therapeutic alliance (Cormier et al., 2017). In people with AN, therapeutic alliance has been shown to significantly impact treatment outcomes (Werz et al., 2022), and in severe and enduring AN, alliance has been shown to be more important for positive outcomes than therapeutic modality or intervention (Stiles-Shields et al., 2016).

Humans may be able to form alliance-like connection with chatbots and other GenAI-based applications (Zengin, 2025), but this may pose risks. GenAI-based chatbots can be programmed to recognize transference and mimic countertransference, but this is an experience that matches the nomenclature on the topic – it is artificial (Zengin, 2025). In other words, there is nobody on the other end of the chat who genuinely cares about what happens to a user in crisis; GenAI is simply producing content it believes will please the user based on prior learning. Ways to help users understand the limits of alliance in a GenAI-based therapy setting may be an important area for research and for policy.

The Black Box Phenomenon

The *black box phenomenon* in GenAI suggests that algorithms can intrinsically evolve beyond their original intent; overtime they can develop complexities that even their designers may not be able to understand (Griffiths et al., 2024). Marham (2021) argues that this lack of transparency allows AI systems to grow unpredictably, complicating efforts by regulatory bodies to adequately monitor and govern their use. This means that technology can become self-fulfilling, and the risk of this is unknown (Markham, 2021). When applied to AN treatment and recovery, such systems pose significant risks to patient privacy and safety. Without an understanding of how technology works, it may be impossible to protect AN clients from dangerous outcomes. Counsellors and regulatory bodies should consult GenAI experts when choosing tools and drafting policies, and explore what the black box phenomenon might mean in specific cases of GenAI-based therapies for AN.

Recommendations for Regulatory Policies and Ethical Codes

Because of its evolving nature, it is difficult to identify and track emerging ethical concerns in GenAI. Both the Canadian Counselling and Psychotherapy Association (CCPA) and

the BCACC's ethical codes will need to be updated to include considerations for AI. In March 2025, BCACC released a set of AI guidelines, focused on helping clinicians make decisions about the use of AI in practice and educating practitioners about privacy laws that may impact the use of AI (Alder, 2025). It discusses the use of NLP technologies for clinical notetaking, and ML for client analytics and predictive modelling. It also recommends checking AI-based services against Canadian law, such as The Artificial Intelligence and Data Act (AIDA) and the Personal Information Protection and Electronic Documents Act (PIPEDA). The guidelines recommend avoiding AI-based technologies that do not explicitly state their adherence to PIPEDA or for which practitioners cannot independently validate adherence to PIPEDA. Additionally, the guidelines recommend reviewing the ethical commitments for BCACC members when reviewing and selecting tools (Alder, 2025). The BCACC Code of Ethical Conduct states that counsellors must always "manage risk by seeking to maximize benefits and minimize potential harm" (British Columbia Association of Clinical Counsellors, 2023, p. 10). This includes managing and clearly communicating risk associated with all AI-based technologies.

The BCACC's AI guidelines provide a good foundation for introducing AI to counselling practice. In addition, regulations and polices may benefit from evaluating issues related to imbedded bias, and mental health bodies may need to advocate for increasing diversity in source data. The CCPA includes justice as an ethical principle, and BCACC's code of ethics includes social responsibility as a sub-item of the principle regarding responsibility to society (British Columbia Association of Clinical Counsellors, 2023; Canadian Counselling and Psychotherapy Association, 2020). Without diverse data sets and inclusive practices in technology design,

people of varying cultures, abilities, genders, and more could be left out of emerging and innovative practices.

A recent application of GenAI in psychotherapy is the integration of technology called *AI Scribe* in Jane, a popular Canadian booking and charting software. AI Scribe is a tool that allows clinicians to upload recordings, and the GenAI application uses these recordings to automate and produce session charting (Jane Software Inc., 2025). Jane has been forthcoming with information about how this program works, and about their compliance with Canadian and American privacy acts such as PIPEDA (Jane Software Inc., 2025). According to their website, none of the data is stored anywhere but with your client's profile, and it is not used for training AI (Jane Software Inc., 2025). This is an example of how privacy could be addressed for GenAI in counselling for AN. Jane has acknowledged both the individual and the ML scale of data and privacy concerns. I could not find any current policies that require clinicians to ask for client consent for the use of AI Scribe or other emerging technologies. It is advisable that BCACC and CCPA address this in future iterations of policies and guides.

Informed consent guidelines may need to be updated, and if tools are used without the presence of a therapist or facilitator, there should be safeguards to ensure all people have ways to clearly understand the limitations of privacy and confidentiality within these tools. Self-directed tools may require age and mental capacity verification in order to ethically conduct consent processes, and in order to comply with existing BCACC and CCPA standards (Fiske et al., 2019). Poorly designed consent forms and interfaces may present risk for vulnerable populations, including those with low mental health literacy, differing abilities, and low technology literacy. Clinicians should always be able to understand the privacy and confidentiality policies associated with tools and services, including levels of encryption, audit frequency, and data breach

remediation practices (Alder, 2025). Practitioners using AI-based tools and services should have the competence to review, evaluate, and utilize them correctly (Alder, 2025; Nasir et al., 2025).

Accountability regarding privacy, hacking, and data breaches should be described clearly in any AI tools that are used, and standards, laws, secure data management, and other safeguards should be in place to protect people from security breaches (Fiske et al., 2019; Murdoch, 2021). Policies and practice agreements should include ways for clients to opt-out of anything involving data collection, as well as the capacity to withdraw their information at any time (Murdoch, 2021). As noted earlier, clear policies regarding risk of self-harm and suicide should also be included in regulatory documentation. During the course of research for this capstone, I could not find any documentation regarding how counsellors might talk clients about GenAI, including its therapeutic use and personal non-therapeutic uses. This is an area that warrants attention, and practice guidelines could be prepared to support clinicians in this space.

This is not an exhaustive list of ethical requirements for GenAI-supported treatments for AN, and a continuous and iterative process will be needed as new technologies are developed, researched, and integrated into practice.

Limitations

The development and maintenance of AN is far more complex than has been addressed in this paper. This capstone has taken a primarily cognitive behavioural approach to the treatment of AN, and while behaviour change is essential, there are many other valid and useful treatments for AN. As noted in chapter two, many studies exploring this disorder suffer from a lack of diversity, and systemic bias seem to reinforce stigma in people who do not fit the thin, young, white female stereotype of AN. This means that conclusions in the research used for this paper are likely biased, as samples may not reflect the actual experience of diverse people with AN.

This paper did not discuss men with AN, and the body of research lacks substantial data regarding how men experience and recover from AN.

This paper has not addressed the complex experience of comorbidities that may exist alongside AN. Depression and anxiety are highly comorbid with AN, for example, which can significantly increase suicide risk (Danielsen et al., 2016). Obsesive-compulsive tendencies are common in people with AN for both food and unrelated to food (American Psychiatric Association, 2022).

People who are neurodivergent are at higher risk of developing disordered eating habits than people who are neurotypical (Keller et al., 2024). Working with people who live with autism and/or attention-deficit hyperactivity disorder (ADHD) and who also struggle with AN may require unique approaches. Avoidant restrictive food intake disorder (ARFID) and pica are often comorbid with autism spectrum disorder (ASD), but these presentations can sometimes be misdiagnosed as AN (American Psychiatric Association, 2022). There have been promising studies about ASD children benefiting from GenAI and robotics in counselling settings (Guz et al., 2024), but the intersection of ASD, GenAI, and AN is out of scope for this paper.

Research for this paper revealed interesting studies that have explored GenAI adaptations of art and music therapy (e.g. Vasist et al., 2022; Zubala et al., 2025). The literature review for this paper did not explore the efficacy of such experiential therapies for AN, and as such, these concepts have not been incorporated in chapter three. There may be other similar instances of developments that could support AN treatment, but for which the scope of this capstone was too small.

GenAI is leading edge technology, and due to the evolving nature and my personal lack of knowledge about its inner workings, there are likely gaps in this paper and how GenAI is

represented. Very little research was found regarding current uses of GenAI for AN treatment, and this limitation resulted in a broader set of search terms to explore the ways in which GenAI is being used or trialed in psychotherapy. This paper seeks to incite discussion about how these topics might be combined to further innovations in AN treatment in the future.

Summary

This capstone has explored the intersection of GenAI and the treatment AN. AN is a life-threatening disorder with significant physiological and psychological risks, and its prevalence and high mortality rate warrant ongoing improvements and advancements in treatment. The literature review highlighted the complexity of AN pathology, the gaps in current treatment approaches, and laid the foundation for a discussion in chapter three about how GenAI might address some of these challenges. While CBT, exposure therapy, and externalization are widely used for AN treatment, limitations such as high dropout rates, stigma, lack of personalization, and barriers to access remain prevalent. Additionally, systemic biases and stereotypes about AN, particularly regarding body size, gender, and race, further complicate treatment accessibility and effectiveness. GenAI may help to address some of these inequities and challenges by reducing improving access to treatment, and increasing personalization, and offering new ways of seeking support for those who experience help-seeking stigma. Existing interventions may be enhanced by well-intentioned and well researched uses of GenAI. Some of these opportunities include improved access, dynamically updated treatment plans, support and monitoring enhancements for people who have been discharged from treatment, and interim support during treatment wait times, which may help minimize the risk of deterioration and worsening symptoms. GenAI may also offer new ways to help clients with emotional regulation and identity exploration, through

user-directed tools such as chatbots, and therapist-facilitated tools such as AVATAR therapy and virtual space creation.

Suicide is a significant risk for individuals with AN, with rates of suicidal ideation, attempts, and deaths far exceeding those of other mental illnesses. NLP and GenAI have been explored as tools for suicide risk detection, analyzing language patterns and emotional cues in medical records, social media posts, and crisis communications. While these technologies show promise in identifying high-risk individuals, they remain unreliable in accurately assessing severe suicide risk and providing appropriate responses. Concerns about the lack of clear intervention protocols when AI detects imminent risk are valid and alarming.

This paper emphasizes the need for interdisciplinary collaboration, robust regulatory frameworks, and ongoing research to ensure the safe and effective integration of GenAI into AN treatment. Given AI's volatility and a lack of current research at the intersection of GenAI and AN, most technologies described in this paper likely pose too great a risk to be integrated into AN treatment at this time. Substantial research is needed to confirm efficacy, safety, and reliability.

Recent advancements in GenAI offer exciting an inspiring ideas that could improve treatment outcomes, reduce stigma, and increase inclusivity for people with AN. However, research is in its infancy and conclusions cannot be drawn about what might be next for the intersection of GenAI and AN. Significant risks and ethical concerns must be addressed, including privacy, safety, embedded bias, and accountability. Although GenAI is still in the early stages of its application in psychotherapy, the potential for these technologies to transform the landscape of mental health care warrants further exploration. By leveraging technology

responsibly, researchers and clinicians may be able to improve recovery rates, reduce barriers to care, and create more inclusive and accessible treatment options for individuals with AN.

For me, the outcome of this capstone is a sense of cautious optimism regarding the role of technology in psychotherapy, offering a balanced perspective amid existing fears and apprehensions. GenAI is probably here to stay, and with the right approach and attitude, it may help us reimagine recovery for AN and eating disorders more broadly.

References

Aird, C. S., Reisinger, B. A. A., Webb, S. N., & Gleaves, D. H. (2025). Comparing social stigma of anorexia nervosa, bulimia nervosa, and binge-eating disorder: A quantitative experimental study. *Journal of Eating Disorders*, *13*(1), Article 15. https://doi.org/10.1186/s40337-025-01198-x

Alder, C. (2025, March). *AI and clinical practice: Ethical considerations and implications for mental health professionals*. British Columbia Association of Clinical Counsellors. https://bcacc.ca/wp-content/uploads/2025/03/BCACC_AI_Guidelines_March_2025.pdf

Almenara, C. A., Cimino, S., & Cerniglia, L. (2022). Sensor technology and intelligent systems in anorexia nervosa: Providing smarter healthcare delivery systems. *BioMed Research International*, *2022*(1), 1565–1576. https://doi.org/10.1155/2022/1955056

American Psychiatric Association. (2022). Feeding and eating disorders. In *Diagnostic and statistical manual of mental disorders* (5th ed., text rev.). https://doi.org/10.1176/appi.books.9780890425787.x10_Feeding_and_Eating_Disorders

American Psychiatric Association Division of Research. (2014). Highlights of changes from DSM-IV to DSM-5: Feeding and eating disorders. *Focus*, *12*(4), 414–415. https://doi.org/10.1176/appi.focus.120408

American Psychological Association. (2017). *What is exposure therapy?* https://www.apa.org/ptsd-guideline/patients-and-families/exposure-therapy

Amiri, S., & Khan, M. A. (2023). Prevalence of non-suicidal self-injury, suicidal ideation, suicide attempts, suicide mortality in eating disorders: A systematic review and meta-analysis. *Eating Disorders*, *31*(5), 487–525. https://doi.org/10.1080/10640266.2023.2196492

Arcelus, J., Mitchell, A. J., Wales, J., & Nielsen, S. (2011). Mortality rates in patients with anorexia nervosa and other eating disorders. A meta-analysis of 36 studies. *Archives of General Psychiatry*, *68*(7), 724–731. https://doi.org/10.1001/archgenpsychiatry.2011.74

Armour, C. Q., Feicht, B., & Gahagan, J. (2024). Improving adult inpatient eating disorder treatment: Perspectives of a sample of individuals in Canada with lived experience. *Journal of Eating Disorders*, *12*(1), Article 166. https://doi.org/10.1186/s40337-024-01121-w

Asnaani, A. & McLean, C. (2017). Ethics in exposure therapy. In A. Wenzel (Ed.), *The SAGE encyclopedia of abnormal and clinical psychology* (1st ed.). Sage Publications. https://search.credoreference.com/articles/Qm9va0FydGljbGU6NDYyODIx?aid=237783

Atwood, M. E., & Friedman, A. (2020). A systematic review of enhanced cognitive behavioral therapy (CBT-E) for eating disorders. *International Journal of Eating Disorders*, *53*(3), 311–330. https://doi.org/10.1002/eat.23206

Austin, A., Craig, S. L., Navega, N., & McInroy, L. B. (2020). It's my safe space: The life-saving role of the internet in the lives of transgender and gender diverse youth. *International Journal of Transgender Health*, *21*(1), 33–44. https://doi.org/10.1080/15532739.2019.1700202

Avila, J. T., Golden, N. H., & Aye, T. (2019). Eating disorder screening in transgender youth. *Journal of Adolescent Health*, *65*(6), 815–817. https://doi.org/10.1016/j.jadohealth.2019.06.011

Bagby, R. M., Parker, J. D. A., & Taylor, G. J. (2020). Twenty-five years with the 20-item Toronto Alexithymia Scale. *Journal of Psychosomatic Research*, *131*, Article 109940. https://doi.org/10.1016/j.jpsychores.2020.109940

Bargiacchi, A., Clarke, J., Paulsen, A., & Leger, J. (2019). Refeeding in anorexia nervosa. *European Journal of Pediatrics*, *178*(3), 413–422. https://doi.org/10.1007/s00431-018-3295-7

Becker, C. B., Farrell, N. R., & Waller, G. (2022). Using exposure therapy for eating disorders. In J. A. J. Smits, J. Jacquart, J. Abramowitz, J. Arch, & J. Margraf (Eds.), *Clinical guide to exposure therapy* (pp. 277–297). Springer International Publishing. https://doi.org/10.1007/978-3-031-04927-9_15

Berg, K. C., Peterson, C. B., Frazier, P., & Crow, S. J. (2012). Psychometric evaluation of the eating disorder examination and eating disorder examination-questionnaire: A systematic review of the literature. *The International Journal of Eating Disorders*, *45*(3), 428–438. https://doi.org/10.1002/eat.20931

Brandsma, L. (2007). Eating disorders across the life span. *Journal of Women & Aging*, *19*(2), 155–172. https://doi.org/10.1300/J074v19n01_10

British Columbia Association of Clinical Counsellors. (2023, November). *Code of Ethical Conduct*. https://bcacc.ca/wp-content/uploads/2023/07/BCACC-COEC-Effective-Nov.-1-2023.pdf

Brockmeyer, T., Skunde, M., Wu, M., Bresslein, E., Rudofsky, G., Herzog, W., & Friederich, H.C. (2014). Difficulties in emotion regulation across the spectrum of eating disorders. *Comprehensive Psychiatry*, *55*(3), 565–571. https://doi.org/10.1016/j.comppsych.2013.12.001

Brown, T., Vogel, E. N., Adler, S., Bohon, C., Bullock, K., Nameth, K., Riva, G., Safer, D. L., & Runfola, C. D. (2020). Bringing virtual reality from clinical trials to clinical practice for the treatment of eating disorders: An example using virtual reality cue exposure therapy.

Journal of Medical Internet Research, *22*(4), Article e16386. https://doi.org/10.2196/16386

Brownstone, L. M., Hunsicker, M. J., Palazzolo, L. A., Dinneen, J. L., Kelly, D. A., Stennes, J., & Scanga, S. (2025). "Sharing lived experience": Describing a virtual counselor-facilitated LGBTQ+ support group for disordered eating. *Psychology of Sexual Orientation and Gender Diversity*, *12*(2), 251–264. https://doi.org/10.1037/sgd0000660

Bryce, G. K. (2014, May 1). *Legal commentary: How private is private? A detailed consideration of a clinical counsellor's legal duty of confidentiality and the exceptions created by the duties to report or warn*. British Columbia Association of Clinical Counsellors (BCACC). https://bcacc.ca/wp-content/uploads/2022/11/140501-How-Private-Is-Private-REVISED.pdf

Burger, P., & Ghosh, S. (2025). All in the name of artificial intelligence: A commentary on Linardon (2025). *International Journal of Eating Disorders*, *58,* 1185–1405. https://doi.org/10.1002/eat.24446

Butler, R. M., & Heimberg, R. G. (2020). Exposure therapy for eating disorders: A systematic review. *Clinical Psychology Review*, *78*, Article 101851. https://doi.org/10.1016/j.cpr.2020.101851

Canadian Counselling and Psychotherapy Association. (2020, March). *Code of ethics*. https://www.ccpa-accp.ca/wp-content/uploads/2020/05/CCPA-2020-Code-of-Ethics-E-Book-EN.pdf

Canadian Mental Health Association. (2014). Eating disorders. https://bc.cmha.ca/documents/eating-disorders-3/

Carastathis, A. (2014). The concept of intersectionality in feminist theory. *Philosophy Compass*, *9*(5), 304–314. https://doi.org/10.1111/phc3.12129

Centers for Disease Control. (2024, July 17). *About body mass index (BMI)*. https://www.cdc.gov/bmi/about/index.html

Chandra, P., Joshi, G., & Bhagwat, R. (2023). ChatGPT's evolution in reshaping cognitive behavioral therapy. *2023 IEEE Engineering Informatics*, 1–9. https://doi.org/10.1109/IEEECONF58110.2023.10520423

Clus, D., Larsen, M. E., Lemey, C., & Berrouiguet, S. (2018). The use of virtual reality in patients with eating disorders: Systematic review. *Journal of Medical Internet Research*, *20*(4), Article e157. https://doi.org/10.2196/jmir.7898

Cormier, L. S., Louise S., Nurius, P., & Osborn, C. J. (2017). *Interviewing and change strategies for helpers* (8th ed.). Cengage Learning.

Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). SAGE.

Cripps, S., Pugh, M., & Serpell, L. (2024). Experiences of externalisation in recovery from Anorexia Nervosa: A reflexive thematic analysis. *Journal of Eating Disorders*, *12*, Article 157. https://doi.org/10.1186/s40337-024-01087-9

Crisafulli, M. A., Thompson-Brenner, H., Franko, D. L., Eddy, K. T., & Herzog, D. B. (2010). Stigmatization of anorexia nervosa: Characteristics and response to intervention. *Journal of Social and Clinical Psychology*, *29*(7), 756–770. https://doi.org/10.1521/jscp.2010.29.7.756

Croce, S. R., Malcolm, A. C., Ralph-Nearman, C., & Phillipou, A. (2024). The role of identity in anorexia nervosa: A narrative review. *New Ideas in Psychology*, *72*, Article 101060. https://doi.org/10.1016/j.newideapsych.2023.101060

Crumby, E., Penwell, T. E., Butler, R. M., Ortiz, A. M. L., Fitterman-Harris, H. F., & Levinson, C. A. (2024). Does response to treatment differ between anorexia nervosa and atypical anorexia nervosa? Findings from two open series trials. *Journal of Affective Disorders*, *365*, 451–458. https://doi.org/10.1016/j.jad.2024.08.115

Cuzzolaro, M. (2023). Artificial intelligence and eating disorders: A commentary. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, *28*(1), Article 68. https://doi.org/10.1007/s40519-023-01598-5

Dahlenburg, S. C., Gleaves, D. H., & Hutchinson, A. D. (2019). Treatment outcome research of enhanced cognitive behaviour therapy for eating disorders: A systematic review with narrative and meta-analytic synthesis. *Eating Disorders*, *27*(5), 482–502. https://doi.org/10.1080/10640266.2018.1560240

Danasekaran, R., & Dande Rajasekar, V. (2023). Reevaluating health metrics: A multi-dimensional approach beyond BMI. *National Journal of Community Medicine*, *14*(10), 697–699. https://doi.org/10.55489/njcm.141020233272

Dang, A., Krik, H., Kiropoulos, L., & Krug, I. (2025). Exploring clinician perspectives on the DSM-5 eating disorder severity ratings: A qualitative study. *Eating Disorders*, *0*(0), 1–13. https://doi.org/10.1080/10640266.2025.2471711

Danielsen, Y. S., Årdal Rekkedal, G., Frostad, S., & Kessler, U. (2016). Effectiveness of enhanced cognitive behavioral therapy (CBT-E) in the treatment of anorexia nervosa: A

prospective multidisciplinary study. *BMC Psychiatry*, *16*(1), Article 342. https://doi.org/10.1186/s12888-016-1056-6

Dewan, M. J., Steenbarger, B. N., & Greenberg, R. P. (Eds.). (2018). *The art and science of brief psychotherapies: A practitioner's guide* (3rd ed.). American Psychiatric Association Publishing.

Diemer, E. W., White Hughto, J. M., Gordon, A. R., Guss, C., Austin, S. B., & Reisner, S. L. (2018). Beyond the binary: Differences in eating disorder prevalence by gender identity in a transgender sample. *Transgender Health*, *3*(1), 17–23. https://doi.org/10.1089/trgh.2017.0043

Dimitropoulos, G., Freeman, V. E., Muskat, S., Domingo, A., & McCallum, L. (2016). "You don't have anorexia, you just want to look like a celebrity": Perceived stigma in individuals with anorexia nervosa. *Journal of Mental Health*, *25*(1), 47–54. https://doi.org/10.3109/09638237.2015.1101422

Drucker, A. M., Fleming, P., & Chan, A.-W. (2016). Research techniques made simple: Assessing risk of bias in systematic reviews. *Journal of Investigative Dermatology*, *136*(11), e109–e114. https://doi.org/10.1016/j.jid.2016.08.021

Duffy, C. (2024, October 30). 'There are no guardrails.' This mom believes an AI chatbot is responsible for her son's suicide. *CNN Business.* https://www.cnn.com/2024/10/30/tech/teen-suicide-character-ai-lawsuit

Duffy, C. (2025, August 26). *Parents of 16-year-old sue OpenAI, claiming ChatGPT advised on his suicide | CNN Business*. CNN. https://www.cnn.com/2025/08/26/tech/openai-chatgpt-teen-suicide-lawsuit

Duggan, H. C., Hardy, G., & Waller, G. (2025). Cognitive-behavioural therapy (CBT) for outpatients with anorexia nervosa: A systematic review and meta-analysis of clinical effectiveness. *Cognitive Behaviour Therapy*, 1–46. https://doi.org/10.1080/16506073.2025.2465745

Efron, S. E., & Ravid, R. (2019). *Writing the literature review: A practical guide*. The Guilford Press.

Egbert, A. H., Hunt, R. A., Williams, K. L., Burke, N. L., & Mathis, K. J. (2022). Reporting racial and ethnic diversity in eating disorder research over the past 20 years. *International Journal of Eating Disorders*, *55*(4), 455–462. https://doi.org/10.1002/eat.23666

Eiring, K., Wiig Hage, T., & Reas, D. L. (2021). Exploring the experience of being viewed as "not sick enough": A qualitative study of women recovered from anorexia nervosa or atypical anorexia nervosa. *Journal of Eating Disorders*, *9*(1), Article 142. https://doi.org/10.1186/s40337-021-00495-5

Elhadad, A., Hamad, S., Elfiky, N., Alanazi, F., Taloba, A. I., & El-Aziz, R. M. A. (2024). Advancing healthcare: Intelligent speech technology for transcription, disease diagnosis, and interactive control of medical equipment in smart hospitals. *AI*, *5*(4), Article 4. https://doi.org/10.3390/ai5040121

Elhai, J. D., Schweinle, W., & Anderson, S. M. (2008). Reliability and validity of the attitudes toward seeking professional psychological help scale-short form. *Psychiatry Research*, *159*(3), 320–329. https://doi.org/10.1016/j.psychres.2007.04.020

Esmaeilzadeh, P. (2025). Decoding the cry for help: AI's emerging role in suicide risk assessment. *AI and Ethics*. https://doi.org/10.1007/s43681-025-00758-w

Fairburn, C. G. (2008). *Cognitive behavior therapy and eating disorders*. Guilford Press.

Fairburn, C. G., & Beglin, S. J. (2011). *Eating Disorder Examination Questionnaire* [Dataset]. https://doi.org/10.1037/t03974-000

Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). Cognitive behaviour therapy for eating disorders: A "transdiagnostic" theory and treatment. *Behaviour Research and Therapy*, *41*(5), 509–528. https://doi.org/10.1016/s0005-7967(02)00088-8

Fardouly, J., Crosby, R. D., & Sukunesan, S. (2022). Potential benefits and limitations of machine learning in the field of eating disorders: Current research and future directions. *Journal of Eating Disorders*, *10*(1), Article 66. https://doi.org/10.1186/s40337-022-00581-2

Fiske, A., Henningsen, P., & Buyx, A. (2019). Your robot therapist will see you now: Ethical implications of embodied artificial intelligence in psychiatry, psychology, and psychotherapy. *Journal of Medical Internet Research*, *21*(5), Article e13216. https://doi.org/10.2196/13216

Fitzpatrick, K. K., Darcy, A., & Vierhile, M. (2017). Delivering cognitive behavior therapy to young adults with symptoms of depression and anxiety using a fully automated conversational agent (Woebot): A randomized controlled trial. *JMIR Mental Health*, *4*(2), Article e7785. https://doi.org/10.2196/mental.7785

Frostad, S., Calugi, S., Engen, C. B. N., & Dalle Grave, R. (2021). Enhanced cognitive behaviour therapy (CBT-E) for severe and extreme anorexia nervosa in an outpatient eating disorder unit at a public hospital: A quality-assessment study. *Journal of Eating Disorders*, *9*(1), Article 143. https://doi.org/10.1186/s40337-021-00499-1

Gan, J. K. E., Wu, V. X., Chow, G., Chan, J. K. Y., & Klainin-Yobas, P. (2022). Effectiveness of non-pharmacological interventions on individuals with anorexia nervosa: A systematic

review and meta-analysis. *Patient Education and Counseling*, *105*(1), 44–55. https://doi.org/10.1016/j.pec.2021.05.031

Garety, P. A., Edwards, C. J., Jafari, H., Emsley, R., Huckvale, M., Rus-Calafell, M., Fornells-Ambrojo, M., Gumley, A., Haddock, G., Bucci, S., McLeod, H. J., McDonnell, J., Clancy, M., Fitzsimmons, M., Ball, H., Montague, A., Xanidis, N., Hardy, A., Craig, T. K. J., & Ward, T. (2024). Digital AVATAR therapy for distressing voices in psychosis: The phase 2/3 AVATAR2 trial. *Nature Medicine*, *30*(12), 3658–3668. https://doi.org/10.1038/s41591-024-03252-8

Garner, L. E., Steinberg, E. J., & McKay, D. (2021). Exposure therapy. In A. Wenzel (Ed.), *Handbook of cognitive behavioral therapy: Overview and approaches* (pp. 275–312). American Psychological Association. https://doi.org/10.1037/0000218-010

Gaudiani, J. L. (2018). *Sick enough: A guide to the medical complications of eating disorders* (1st ed.). Routledge.

Gengler, E. J. (2024). Sexism, racism, and classism: Social biases in text-to-image generative AI in the context of power, success, and beauty. *Wirtschaftsinformatik 2024 Proceedings*, *48*.

Goldstein, W. N., & Goldberg, S. T. (2004). *Using the Transference in Psychotherapy*. Bloomsbury Academic.

Gonzalez, A. A., Resko, S., & Cassady, C. M. (2020). Cognitive behavioral therapy. In S. Ringel & J. R. Brandell (Eds.), *Trauma: Contemporary directions in trauma theory, research, and practice* (2nd ed., pp. 20–66). Columbia University Press. https://doi.org/10.7312/ring18886-003

Government of Canada. (2020, August 11). *Artificial Intelligence—ITSAP.00.040*. Canadian Centre for Cyber Security. https://www.cyber.gc.ca/en/guidance/artificial-intelligence-itsap00040#defn-artificial-intelligence

Gramaglia, C., Gambaro, E., & Zeppegno, P. (2020). Alexithymia and treatment outcome in anorexia nervosa: A scoping review of the literature. *Frontiers in Psychiatry*, *10*. https://doi.org/10.3389/fpsyt.2019.00991

Greca, A. D., Amaro, I., Barra, P., Rosapepe, E., & Tortora, G. (2024). Enhancing therapeutic engagement in mental health through virtual reality and generative AI: A co-creation approach to trust building. *2024 IEEE International Conference on Bioinformatics and Biomedicine (BIBM)*, 6805–6811. https://doi.org/10.1109/BIBM62325.2024.10822177

Griffen, T. C., Naumann, E., & Hildebrandt, T. (2018). Mirror exposure therapy for body image disturbances and eating disorders: A review. *Clinical Psychology Review*, *65*, 163–174. https://doi.org/10.1016/j.cpr.2018.08.006

Griffiths, S., Harris, E. A., Whitehead, G., Angelopoulos, F., Stone, B., Grey, W., & Dennis, S. (2024). Does TikTok contribute to eating disorders? A comparison of the TikTok algorithms belonging to individuals with eating disorders versus healthy controls. *Body Image*, *51*, Article 101807. https://doi.org/10.1016/j.bodyim.2024.101807

Guz, E., Niderla, K., & Kata, G. (2024). Advancing autism therapy: Emotion analysis using rehabilitation robots and AI for children with ASD. *Journal of Modern Science*, *57*(3), 340–355. https://doi.org/10.13166/jms/191144

Haber, Y., Hadar Shoval, D., Levkovich, I., Yinon, D., Gigi, K., Pen, O., Angert, T., & Elyoseph, Z. (2025). The externalization of internal experiences in psychotherapy through generative artificial intelligence: A theoretical, clinical, and ethical analysis.

Frontiers in Digital Health, *7*, Article 1512273. https://doi.org/10.3389/fdgth.2025.1512273

Hambleton, A., Pepin, G., Le, A., Maloney, D., National Eating Disorder Research Consortium, Maguire, S., Kohn, M., & Touyz, S. (2022). Psychiatric and medical comorbidities of eating disorders: Findings from a rapid review of the literature. *Journal of Eating Disorders*, *10*(1), Article 132. https://doi.org/10.1186/s40337-022-00654-2

Health Canada. (2017, May 4). *Canadian Guidelines for Body Weight Classification in Adults*. https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/healthy-weights/canadian-guidelines-body-weight-classification-adults.html

Hemker, S., Herrando, C., & Constantinides, E. (2021). The transformation of data marketing: How an ethical lens on consumer data collection shapes the future of marketing. *Sustainability*, *13*(20), Article 20. https://doi.org/10.3390/su132011208

Herrmann, L., Barkmann, C., Bindt, C., Hohmann, S., Fahrenkrug, S., & Becker-Hebly, I. (2024). How social is social media for transgender and gender-diverse youth? Association of online social experiences with internalizing mental health problems. *European Child & Adolescent Psychiatry*, *33*(10), 3503–3516. https://doi.org/10.1007/s00787-024-02396-9

Hoffman, B. D., Oppert, M. L., & Owen, M. (2024). Understanding young adults' attitudes towards using AI chatbots for psychotherapy: The role of self-stigma. *Computers in Human Behavior: Artificial Humans*, *2*(2), 100086. https://doi.org/10.1016/j.chbah.2024.100086

Hogeveen, J., & Grafman, J. (2021). Alexithymia. *Handbook of Clinical Neurology*, *183*, 47–62. https://doi.org/10.1016/B978-0-12-822290-4.00004-9

Jacoby, R. J., & Abramowitz, J. S. (2016). Inhibitory learning approaches to exposure therapy: A critical review and translation to obsessive-compulsive disorder. *Clinical Psychology Review*, *49*, 28–40. https://doi.org/10.1016/j.cpr.2016.07.001

Jane Software Inc. (2025). *Is Jane HIPAA compliant?* https://jane.app/guide/is-jane-hipaa-compliant

Jesudason, D., Bacchi, S., & Bastiampillai, T. (2025). Artificial intelligence (AI) in psychotherapy: A challenging frontier. *Australasian Psychiatry*. https://doi.org/10.1177/10398562251346075

Keller, J., Herle, M., Mandy, W., & Leno, V. C. (2024). The overlap of disordered eating, autism and ADHD: Future research priorities as identified by adults with lived experience. *The Lancet Psychiatry*, *11*(12), 1030–1036. https://doi.org/10.1016/S2215-0366(24)00186-X

Kerr, J. A., Paine, J., Thrower, E., Hoq, M., Mollica, C., Sawyer, S. M., Azzopardi, P. S., & Pang, K. C. (2024). Prevalence of eating disorder symptoms in transgender and gender diverse adolescents presenting for gender-affirming care. *Journal of Adolescent Health*, *74*(4), 850–853. https://doi.org/10.1016/j.jadohealth.2023.11.396

Kessler, U., Kleppe, M. M., Rekkedal, G. Å., Rø, Ø., & Danielsen, Y. (2022). Experiences when implementing enhanced cognitive behavioral therapy as a standard treatment for anorexia nervosa in outpatients at a public specialized eating-disorder treatment unit. *Journal of Eating Disorders*, *10*(1), Article 15. https://doi.org/10.1186/s40337-022-00536-7

Khalsa, S. S., Portnoff, L. C., McCurdy-McKinnon, D., & Feusner, J. D. (2017). What happens after treatment? A systematic review of relapse, remission, and recovery in anorexia nervosa. *Journal of Eating Disorders*, *5*(1), 20. https://doi.org/10.1186/s40337-017-0145-3

Kinnaird, E., Stewart, C., & Tchanturia, K. (2019). Investigating alexithymia in autism: A systematic review and meta-analysis. *European Psychiatry*, *55*, 80–89. https://doi.org/10.1016/j.eurpsy.2018.09.004

Krug, I., Liu, S., Portingale, J., Croce, S., Dar, B., Obleada, K., Satheesh, V., Wong, M., & Fuller-Tyszkiewicz, M. (2025). A meta-analysis of mortality rates in eating disorders: An update of the literature from 2010 to 2024. *Clinical Psychology Review*, *116*, Article 102547. https://doi.org/10.1016/j.cpr.2025.102547

Leff, J., Williams, G., Huckvale, M., Arbuthnot, M., & Leff, A. P. (2014). Avatar therapy for persecutory auditory hallucinations: What is it and how does it work? *Psychosis*, *6*(2), 166–176. https://doi.org/10.1080/17522439.2013.773457

Levinson, C. A., & Byrne, M. (2015). The fear of food measure: A novel measure for use in exposure therapy for eating disorders. *International Journal of Eating Disorders*, *48*(3), 271–283. https://doi.org/10.1002/eat.22344

Levinson, C. A., Christian, C., Shankar-Ram, S., Brosof, L. C., & Williams, B. (2019). Sensor technology implementation for research, treatment, and assessment of eating disorders. *International Journal of Eating Disorders*, *52*(10), 1176–1180. https://doi.org/10.1002/eat.23120

Levinson, C. A., Vanzhula, I. A., & Christian, C. (2019). Development and validation of the eating disorder fear questionnaire and interview: Preliminary investigation of eating disorder fears. *Eating Behaviors*, *35*, Article 101320. https://doi.org/10.1016/j.eatbeh.2019.101320

Levkovich, I., & Elyoseph, Z. (2023). Suicide risk assessments through the eyes of ChatGPT-3.5 versus ChatGPT-4: Vignette study. *JMIR Mental Health*, *10*(1), Article e51232. https://doi.org/10.2196/51232

Linardon, J., Anderson, C., McClure, Z., Liu, C., Messer, M., Jarman, H. K., & Fuller-Tyszkiewicz, M. (2024). A dialectical behavior therapy skills training smartphone app for recurrent binge eating: A randomized clinical trial. *Psychological Medicine*, *54*(16), 4646–4657. https://doi.org/10.1017/S0033291724002800

Liu, H., Peng, H., Song, X., Xu, C., & Zhang, M. (2022). Using AI chatbots to provide self-help depression interventions for university students: A randomized trial of effectiveness. *Internet Interventions*, *27*, Article 100495. https://doi.org/10.1016/j.invent.2022.100495

Lv, Z. (2023). Generative artificial intelligence in the metaverse era. *Cognitive Robotics*, *3*, 208–217. https://doi.org/10.1016/j.cogr.2023.06.001

MacDonald, D. E., McFarlane, T., & Trottier, K. (2020). Chapter 22: Eating disorders. In J. E. Maddux & B. A. Winstead (Eds.), P*sychopathology: Foundations for a contemporary understanding* (5th ed., pp. 495–521). Routledge.

Magrini, M., Curzio, O., Tampucci, M., Donzelli, G., Cori, L., Imiotti, M. C., Maestro, S., & Moroni, D. (2022). Anorexia nervosa, body image perception and virtual reality therapeutic applications: State of the art and operational proposal. *International Journal of Environmental Research and Public Health*, *19*(5), Article 2533. https://doi.org/10.3390/ijerph19052533

Malott, K. M., Barraclough, S., & Yee, T. (2023). Towards decolonizing diagnosis: A critical review and suggested alternatives. *International Journal for the Advancement of Counselling*, *45*(1), 1–17. https://doi.org/10.1007/s10447-022-09501-0

Mangweth-Matzek, B., Kummer, K. K., & Hoek, H. W. (2023). Update on the epidemiology and treatment of eating disorders among older people. *Current Opinion in Psychiatry*, *36*(6), 405 – 411. https://doi.org/10.1097/YCO.0000000000000893

Markham, A. (2021). The limits of the imaginary: Challenges to intervening in future speculations of memory, data, and algorithms. *New Media & Society*, *23*(2), 382–405. https://doi.org/10.1177/1461444820929322

McBride, H. L., & Kwee, J. L. (Eds.). (2019). *Embodiment and eating disorders: Theory, research, prevention, and treatment*. Routledge.

McCarthy, L. (2023, June 9). A wellness chatbot is offline after its 'harmful' focus on weight loss. *The New York Times*. https://www.nytimes.com/2023/06/08/us/ai-chatbot-tessa-eating-disorders-association.html

McGregor, K., McKenna, J. L., Barrera, E. P., Williams, C. R., Hartman-Munick, S. M., & Guss, C. E. (2023). Disordered eating and considerations for the transgender community: A review of the literature and clinical guidance for assessment and treatment. *Journal of Eating Disorders*, *11*, Article 75. https://doi.org/10.1186/s40337-023-00793-0

Meyer, J. M., Farrell, N. R., Kemp, J. J., Blakey, S. M., & Deacon, B. J. (2014). Why do clinicians exclude anxious clients from exposure therapy? *Behaviour Research and Therapy*, *54*, 49–53. https://doi.org/10.1016/j.brat.2014.01.004

Miltner, K. (2024). "A.I. is holding a mirror to our society": Lensa and the discourse of visual generative AI. *Journal of Digital Social Research*, *6*(4), 13–33. https://doi.org/10.33621/jdsr.v6i440456

Mitsea, E., Drigas, A., & Skianis, C. (2023). Digitally assisted mindfulness in training self-regulation skills for sustainable mental health: A systematic review. *Behavioral Sciences*, *13*(12), Article 1008. https://doi.org/10.3390/bs13121008

Moreno, R., Buckelew, S. M., Accurso, E. C., & Raymond-Flesch, M. (2023). Disparities in access to eating disorders treatment for publicly-insured youth and youth of color: A retrospective cohort study. *Journal of Eating Disorders*, *11*(1), Article 10. https://doi.org/10.1186/s40337-022-00730-7

Morgan, J. F., Lazarova, S., Schelhase, M., & Saeidi, S. (2014). Ten session body image therapy: Efficacy of a manualised body image therapy. *European Eating Disorders Review*, *22*(1), 66–71. https://doi.org/10.1002/erv.2249

Murdoch, B. (2021). Privacy and artificial intelligence: Challenges for protecting health information in a new era. *BMC Medical Ethics*, *22*(1), Article 122. https://doi.org/10.1186/s12910-021-00687-3

Murdoch, B., Jandura, A., & Caulfield, T. (2022). Privacy considerations in the Canadian regulation of commercially-operated healthcare artificial intelligence. *Canadian Journal of Bioethics*, *5*(4), 44–52. https://doi.org/10.7202/1094696ar

Nasir, M., Siddiqui, K., & Ahmed, S. (2025). Ethical-legal implications of AI-powered healthcare in critical perspective. *Frontiers in Artificial Intelligence*, *8*. https://doi.org/10.3389/frai.2025.1619463

National Eating Disorders Association. (2025). *About Us*. https://www.nationaleatingdisorders.org/about-us/

National Initiative for Eating Disorders. (2024). *Eating Disorders in Canada*. NIED. https://www.nied.ca/eating-disorders-in-canada

National Institute for Health and Care Excellence (NICE). (2024, March 25). *Digital health technologies to help manage symptoms of psychosis and prevent relapse in adults and young people: Early value assessment*. Health technology evaluation. https://www.nice.org.uk/guidance/hte17

Pataranutaporn, P., Danry, V., Leong, J., Punpongsanon, P., Novy, D., Maes, P., & Sra, M. (2021). AI-generated characters for supporting personalized learning and well-being. *Nature Machine Intelligence*, *3*(12), 1013–1022. https://doi.org/10.1038/s42256-021-00417-9

Patten, S. B., Dimitropoulos, G., Hews-Girard, J., Austin, A., Sharifi, V., Williams, J., Bahji, A., & Bulloch, A. (2024). Postdischarge mortality in a cohort hospitalized with anorexia nervosa. *International Journal of Eating Disorders*, *57*(12), 2482–2486. https://doi.org/10.1002/eat.24296

Pedram, P., Patten, S. B., Bulloch, A. G. M., Williams, J. V. A., & Dimitropoulos, G. (2021). Self-reported lifetime history of eating disorders and mortality in the general population: A Canadian population survey with record linkage. *Nutrients*, *13*(10), Article 3333. https://doi.org/10.3390/nu13103333

Pendergrass, W. (2023). Artificial intelligence and its potential harm through the use of generative adversarial network image filters on TikTok. *Issues In Information Systems*. https://doi.org/10.48009/1_iis_2023_110

Pinto, A. M., Heinberg, L. J., Coughlin, J. W., Fava, J. L., & Guarda, A. S. (2008). The Eating Disorder Recovery Self-Efficacy Questionnaire (EDRSQ): Change with treatment and prediction of outcome. *Eating Behaviors*, *9*(2), 143–153. https://doi.org/10.1016/j.eatbeh.2007.07.001

Poulin, C., Shiner, B., Thompson, P., Vepstas, L., Young-Xu, Y., Goertzel, B., Watts, B., Flashman, L., & McAllister, T. (2014). Predicting the risk of suicide by analyzing the text of clinical notes. *PLoS ONE*, *9*(1), Article e85733. https://doi.org/10.1371/journal.pone.0085733

Prentice, A. M., & Jebb, S. A. (2001). Beyond body mass index. *Obesity Reviews*, *2*(3), 141–147. https://doi.org/10.1046/j.1467-789x.2001.00031.x

Pugh, M., & Waller, G. (2017). Understanding the "anorexic voice" in anorexia nervosa. *Clinical Psychology & Psychotherapy*, *24*(3), 670–676. https://doi.org/10.1002/cpp.2034

Raffoul, A., Nicula, M., Gao, C., & Obeid, N. (2025). A call for increased measurement of eating disorders and disordered eating in federal surveillance in Canada. *Health Promotion and Chronic Disease Prevention in Canada*, *45*(6), 299–305. https://doi.org/10.24095/hpcdp.45.6.04

Rahman, M. A., Brown, D. J., Mahmud, M., Harris, M., Shopland, N., Heym, N., Sumich, A., Turabee, Z. B., Standen, B., Downes, D., Xing, Y., Thomas, C., Haddick, S., Premkumar, P., Nastase, S., Burton, A., & Lewis, J. (2023). Enhancing biofeedback-driven self-guided virtual reality exposure therapy through arousal detection from multimodal data using machine learning. *Brain Informatics*, *10*(1), Article 14. https://doi.org/10.1186/s40708-023-00193-9

Reeves, M. B., & Sackett, C. R. (2021). The externalization of anorexia nervosa in narrative family therapy with adolescents. *Journal of Creativity in Mental Health*, *16*(3), 285–291. https://doi.org/10.1080/15401383.2020.1774456

Richards, D., Vythilingam, R., & Formosa, P. (2023). A principlist-based study of the ethical design and acceptability of artificial social agents. *International Journal of Human-Computer Studies*, *172*, Article 102980. https://doi.org/10.1016/j.ijhcs.2022.102980

Riddle, D. R., Presseller, E. K., Manasse, S. M., & Juarascio, A. S. (2023). Latent profiles of emotion dysregulation among individuals with binge-spectrum eating disorders: Associations with eating disorder pathology. *European Eating Disorders Review: The Journal of the Eating Disorders Association*, *31*(6), 793–801. https://doi.org/10.1002/erv.3009

Riva, G., Malighetti, C., & Serino, S. (2021). Virtual reality in the treatment of eating disorders. *Clinical Psychology & Psychotherapy*, *28*(3), 477–488. https://doi.org/10.1002/cpp.2622

Rodgers, R. F., Berry, R., & Franko, D. L. (2018). Eating disorders in ethnic minorities: An update. *Current Psychiatry Reports*, *20*(10), Article 90. https://doi.org/10.1007/s11920-018-0938-3

Rowshon, M., Mosaddeque, A., Ahmed, T., & Twaha, U. (2025). Exploring the impact of generative AI and virtual reality on mental health: Opportunities, challenges, and implications for well-being. *International Journal of Multidisciplinary Research and Growth Evaluation*, *6*(2), 10–796. https://doi.org/10.54660/.IJMRGE.2022.3.1.784-796

Russell, H., Aouad, P., Le, A., Marks, P., Maloney, D., National Eating Disorder Research Consortium, Touyz, S., & Maguire, S. (2023). Psychotherapies for eating disorders: Findings from a rapid review. *Journal of Eating Disorders*, *11*(1), 175. https://doi.org/10.1186/s40337-023-00886-w

Sætra, H. S. (2023). Generative AI: Here to stay, but for good? *Technology in Society*, *75*, Article 102372. https://doi.org/10.1016/j.techsoc.2023.102372

Sahai, S., & Tiwari, P. (2024). Role of art therapy in identity exploration among LGBTQIA+ individuals: A scoping review. *Canadian Journal of Art Therapy*, *37*(1), 18–29. https://doi.org/10.1080/26907240.2024.2359748

Sandoval-Araujo, L. E., Cusack, C. E., Ralph-Nearman, C., Glatt, S., Han, Y., Bryan, J., Hooper, M. A., Karem, A., & Levinson, C. A. (2024). Differentiation between atypical anorexia nervosa and anorexia nervosa using machine learning. *International Journal of Eating Disorders*, *57*(4), 937–950. https://doi.org/10.1002/eat.24160

Sharp, G., Torous, J., & West, M. L. (2023). Ethical challenges in AI approaches to eating disorders. *Journal of Medical Internet Research*, *25*, Article e50696. https://doi.org/10.2196/50696

Singh, O. P. (2023). Artificial intelligence in the era of ChatGPT: Opportunities and challenges in mental health care. *Indian Journal of Psychiatry*, *65*(3), 297–298. https://doi.org/10.4103/indianjpsychiatry.indianjpsychiatry_112_23

Smith, A. R., Ortiz, S. N., Forrest, L. N., Velkoff, E. A., & Dodd, D. R. (2018). Which comes first? An examination of associations and shared risk factors for eating disorders and suicidality. *Current Psychiatry Reports*, *20*(9), 77. https://doi.org/10.1007/s11920-018-0931-x

Solmi, M., Wade, T. D., Byrne, S., Del Giovane, C., Fairburn, C. G., Ostinelli, E. G., De Crescenzo, F., Johnson, C., Schmidt, U., Treasure, J., Favaro, A., Zipfel, S., & Cipriani, A. (2021). Comparative efficacy and acceptability of psychological interventions for the treatment of adult outpatients with anorexia nervosa: A systematic review and network meta-analysis. *The Lancet Psychiatry*, *8*(3), 215–224. https://doi.org/10.1016/S2215-0366(20)30566-6

Statistics Canada. (2022, March 2). *Mental Health and Access to Care Survey, 2022*. Government of Canada. https://www.statcan.gc.ca/en/statistical-programs/instrument/5015_Q2_V1

Statistics Canada. (2023, September 22). *Mental Health and Access to Care Survey (MHACS)*. Government of Canada. https://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=5015

Statistics Canada. (2024). *Mental health indicators* [Dataset]. Government of Canada. https://doi.org/10.25318/1310046501-ENG

Stiles-Shields, C., Bamford, B. H., Touyz, S., Le Grange, D., Hay, P., & Lacey, H. (2016). Predictors of therapeutic alliance in two treatments for adults with severe and enduring anorexia nervosa. *Journal of Eating Disorders*, *4*(1), 13. https://doi.org/10.1186/s40337-016-0102-6

Stone, K. D., Dimitropoulos, G., & MacMaster, F. P. (2021). Food for thought: A dissonance between healthcare utilization costs and research funding for eating disorders in Canada. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, *30*(3), 197–203.

Tadesse, M. M., Lin, H., Xu, B., & Yang, L. (2019). Detection of suicide ideation in social media forums using deep learning. *Algorithms*, *13*(1), 7. https://doi.org/10.3390/a13010007

Tanck, J. A., Hartmann, A. S., Svaldi, J., Hagena, S., Osen, B., Stierle, C., & Vocks, S. (2022). What happens in the course of positive mirror exposure? Effects on eating pathology, body satisfaction, affect, and subjective physiological arousal in patients with anorexia and bulimia nervosa. *European Eating Disorders Review*, *30*(6), 797–814. https://doi.org/10.1002/erv.2929

Thompson, A., Calissano, C., Treasure, J., Ball, H., Montague, A., Ward, T., & Cardi, V. (2023). A case series to test the acceptability, feasibility and preliminary efficacy of AVATAR therapy in anorexia nervosa. *Journal of Eating Disorders*, *11*(1), 181. https://doi.org/10.1186/s40337-023-00900-1

Trottier, K., Carter, J. C., MacDonald, D. E., McFarlane, T., & Olmsted, M. P. (2015). Adjunctive graded body image exposure for eating disorders: A randomized controlled initial trial in clinical practice. *International Journal of Eating Disorders*, *48*(5), 494–504. https://doi.org/10.1002/eat.22341

Truscott, D., & Crook, K. H. (2021). *Ethics for the practice of psychology in Canada* (3rd ed.). Pica Pica Press.

Tucker, C., & Smith-Adcock, S. (2017). Humanistic approaches. In S. Smith-Adcock & C. Tucker (Eds.), *Counseling children and adolescents: Connecting theory, development, and diversity* (pp. 165 – 191). SAGE Publications, Inc.

Vanzhula, I. A., Duck, S. A., Pletch, A., Guarda, A. S., & Schreyer, C. (2023a). Greater dietary variety is associated with lower food anxiety at discharge from intensive eating disorder treatment. *International Journal of Eating Disorders*, *56*(7), 1365–1377. https://doi.org/10.1002/eat.23940

Vanzhula, I. A., Spoor, S. P., Ernst, S. E., Cusack, C. E., Farrell, N. R., Nuñez, M., Essayli, J. H., & Levinson, C. A. (2023b). Evaluating the psychometric properties of the Fear of Food Measure in adolescents across three independent samples. *Psychological Assessment*, *35*(9), 751–762. https://doi.org/10.1037/pas0001260

Vasist, S. G., Vishesh, P., Pavan, A., Rao, S., & Srinivas, K. S. (2022). DeepTunes—Music generation based on facial emotions using deep learning. *2022 IEEE 7th International*

Conference for Convergence in Technology (I2CT), 1–6. https://doi.org/10.1109/I2CT54291.2022.9825153

Vogel, D. L., Armstrong, P. I., Tsai, P.-C., Wade, N. G., Hammer, J. H., Efstathiou, G., Holtham, E., Kouvaraki, E., Liao, H.-Y., Shechtman, Z., & Topkaya, N. (2013). Cross-cultural validity of the Self-Stigma of Seeking Help (SSOSH) scale: Examination across six nations. *Journal of Counseling Psychology*, *60*(2), 303–310. https://doi.org/10.1037/a0032055

Voswinkel, M. M., Rijkers, C., van Delden, J. J. M., & van Elburg, A. A. (2021). Externalizing your eating disorder: A qualitative interview study. *Journal of Eating Disorders*, *9*(1), 128. https://doi.org/10.1186/s40337-021-00486-6

Walsh, B. T., Hagan, K. E., & Lockwood, C. (2023). A systematic review comparing atypical anorexia nervosa and anorexia nervosa. *International Journal of Eating Disorders*, *56*(4), 798–820. https://doi.org/10.1002/eat.23856

Webb, H., Griffiths, M., & Schmidt, U. (2024). Experiences of intensive treatment for people with eating disorders: A systematic review and thematic synthesis. *Journal of Eating Disorders*, *12*(1), 115. https://doi.org/10.1186/s40337-024-01061-5

Werz, J., Voderholzer, U., & Tuschen-Caffier, B. (2022). Alliance matters: But how much? A systematic review on therapeutic alliance and outcome in patients with anorexia nervosa and bulimia nervosa. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, *27*(4), 1279–1295. https://doi.org/10.1007/s40519-021-01281-7

White, M., & Epston, D. (1990). *Narrative means to therapeutic ends* (1st ed). Norton.

World Health Organization. (2019). *International statistical classification of diseases and related health problems* (10th ed.). https://icd.who.int/browse10/2019/en#/F50-F59

Xian, X., Chang, A., Xiang, Y.-T., & Liu, M. T. (2024). Debate and dilemmas regarding generative AI in mental health care: Scoping review. *Interactive Journal of Medical Research*, *13*, e53672. https://doi.org/10.2196/53672

Zengin, I. G. (2025). Transference in artificial intelligence applications. *Turkish Journal of Clinical Psychiatry*, *28*(2), 178–180. https://doi.org/10.5505/kpd.2025.60352

Zerwas, S., & Claydon, E. (2014). Eating disorders across the life-span: From menstruation to menopause. In D. L. Barnes (Ed.), *Women's Reproductive Mental Health Across the Lifespan* (pp. 237–261). Springer International Publishing. https://doi.org/10.1007/978-3-319-05116-1_13

Zubala, A., Pease, A., Lyszkiewicz, K., & Hackett, S. (2025). Art psychotherapy meets creative AI: An integrative review positioning the role of creative AI in art therapy process. *Frontiers in Psychology*, *16*. https://doi.org/10.3389/fpsyg.2025.1548396