More Than a Game

Health Providers' Perspectives on Digital Games in Pediatric Cancer Treatment

Student Name: Anaïs Pérez

Student Number: 616900

Supervisor: Dr. Teresa de la Hera

Master Thesis CM5050

Erasmus School of History, Culture and Communication

Erasmus University Rotterdam

Master's Thesis

June 2025

Word Count: 16070

This thesis is more than an academic project; it is a deeply personal journey shaped by my mother's strength.

Watching her fight and overcome cancer against all odds taught me how important emotional and psychological well-being is during illness.

Her experience impacted me and inspired the topic of this research.

Abstract

This thesis investigates how health providers in pediatric oncology perceive the use of digital games by childhood cancer patients during different phases of treatment. The emotional toll of cancer on children is widely documented, yet research often overlooks the tools children themselves rely on to manage psychological stress. Digital play (particularly video games) is one of those tools. While often dismissed as simple distractions, this study examines how professionals interpret their role as psychological regulators and emotional anchors in clinical environments. The research draws on seven semi-structured expert interviews with Spanish health providers who work directly with pediatric oncology patients. This thesis adds to the existing literature by moving beyond the dominant focus on passive distraction and the physical benefits to patients. It addresses how digital games are interpreted and implemented by those closest to the child's psychological journey. Thus, the research question is: How do health providers perceive the use of digital games by childhood cancer patients during different phases of treatment? By using a thematic analysis approach, this study uncovers how digital games are seen as practical, flexible, and emotionally supportive mechanisms that adapt to the varying demands of cancer treatment. Importantly, these games are not viewed as secondary to therapy or as momentary relief, but as integrated tools that children use to cope or tools that professionals actively rely on in their care strategies.

Theoretically, the research is rooted in Maslow's Hierarchy of Needs and the Uses and Gratifications Theory (UGT), both of which were reflected in the findings. The results reveal four major thematic areas: the emotional regulation from a health provider's lens; Games as tools to shape their treatment journey; Games as a medium for connection and belonging; and practical concerns. Within these themes, professionals consistently described games as contributing to emotional regulation, mood improvement, procedural compliance, and even identity preservation, allowing children to momentarily step outside the patient role and into one of agency and imagination. In the first theme, digital games fulfilled both basic and higher-order emotional needs by offering safety, escapism and creative expression. In the second, their adaptability across illness stages reflected how games support evolving emotional, cognitive and motor demands. In the third, their use is for re-establishing and maintaining social and familiar bonds while isolated. In the fourth, there are minor but relevant concerns about the tool. The study reinforces that play does not lose its function in clinical settings but becomes a flexible coping tool across emotional relief, treatment adaptation, and cooperation. The study highlights the need for future research that includes the pediatric cancer patient's perspective, investigates long-term psychological outcomes, and recognises the role of play not just in therapy rooms, but in everyday clinical care.

Keywords: Pediatric oncology, digital games, emotional regulation, health communication, therapeutic play, qualitative research

1. Introduction

This thesis aims to investigate the use of digital games by pediatric oncology patients through the lens of their health providers. Treatments for chronic diseases such as cancer are a prolonged and often distressing journey (Datta et al., 2019, p.6). This is particularly true for pediatric patients who are still in the developmental stages of their lives. According to Wakefield et al. (2009, p.263), pediatric cancer patients can face significant emotional and psychological challenges due to the physical and mental toll of treatments such as chemotherapy, radiation, and surgery.

Both stress and isolation can negatively impact their mental health, leading to high rates of anxiety and depression (Datta et al., 2019, p.6). Furthermore, several studies have been conducted to analyse the impact cancer has on children's mental health. According to Thomas (2024, para. 8), depression rates have reached up to 40.8% in pediatric patients. Therefore, the need for innovative, non-invasive interventions that can improve their psychological well-being during treatment is essential. Moreover, other recent studies suggested that the use of digital games can offer pediatric cancer patients effective coping mechanisms as a form of distraction and emotional relief (De La Hera & Sanz, 2021, pp. 40-42). These serve as a tool to alleviate stress and promote emotional regulation, consequently creating a sense of normalcy despite their health challenges. Nevertheless, even if these findings are a step forward in improving the hefty and non-linear journey for pediatric cancer patients, there is a significant gap in research regarding how health providers in pediatric oncology perceive the role of digital games in supporting the psychological well-being of childhood cancer patients during various stages of treatment. This study aims to investigate the perceptions of health providers regarding the use of digital games by pediatric oncology patients.

Research Question

Over the last two decades, researchers have documented the role of play in a child's development, emphasising its importance in encouraging emotional, cognitive, and social growth (Nijhof et al., 2018, p. 422). Non-digital play has been recognised as a therapeutic tool for children enduring cancer treatment, providing comfort, distraction, and emotional

expression when exposed to uncertainty (Nijhof et al., 2018, p. 423). However, the rise of digital technologies has led to the use of video games as an alternative form of play. This provides advantages for pediatric cancer patients over traditional forms (such as board games, colouring, or group activities), being particularly relevant for children with prolonged isolation or reduced mobility due to treatment (De la Hera & Sanz, 2021, pp. 40–41). Unspoken side effects of the treatment, such as long periods of isolation, are not taken as seriously yet; they can be damaging to the patient and cause psychological distress (Barrett et al., 2020, pp. 2-3). Moreover, digital games not only offer entertainment and distraction but also serve as tools for emotional regulation, social interaction, and cognitive stimulation (Alotaibi, 2024, pp. 2-3). Despite the existing research on the benefits of digital play for children, there is still a lack of studies on unstructured digital play in pediatric cancer (De La Hera & Sanz, 2021, p. 40). While certain studies praise the emotional and interactive value of digital games (De la Hera & Sanz, 2021, p. 43), broader concerns about excessive screen time or issues in re-integration to the real world are raised in research on chronically ill children (Alotaibi, 2024, p.3). Adding to that, little research has been conducted on the adverse effects digital play could have on pediatric oncology patients, which is a critical aspect that will also be explored in this study. It is important to note that for a healthy child, video games can boost creativity, teamwork, communication and problem-solving skills (Nijhof et al., 2018, p.422). This research wishes to expand on that and comprehend health providers' perspectives on the benefits and risks of using digital games for their mental well-being. Thus, the question at hand is as follows:

How do health providers perceive the use of digital games by pediatric cancer patients during different phases of treatment?

The study's goal is to offer health providers professional insights into the possible benefits and limitations of incorporating digital play into paediatric cancer care by focusing on several stages of therapy, such as diagnosis, active treatment, and remission.

1.1 Academic Relevance

In previous studies, the role of digital games in improving the emotional and psychological well-being of pediatric cancer patients was examined (De La Hera & Sanz,

2021, p.40; Nijhof et al., 2018, p. 422). Furthermore, previous studies highlight that digital play is a tool for pain management and distraction, allowing children to cope with the stress of oncological treatments (Puig et al., 2020, p.2). For instance, Puig et al. (2020) conducted a study on the use of digital games, which resulted in pain intensity reduction associated with chemotherapy-induced mucositis. Digital games also foster emotional expression and social interaction, which are essential for children who are often isolated during long hospital stays (Hargraves, 2019).

The methodological approach for this study, however, differs from the others. While Nijhof et al (2018) conducted a literature review, and De La Hera & Sanz (2021) conducted interviews with parents and NGO professionals, I will interview health professionals, including psychologists. This will provide a complementary understanding of the topic as I will construct my findings from a psychological angle within the pediatric oncology field, providing a well-rounded understanding of the role of digital games in the study's context.

Linking this to Maslow's Hierarchy of Needs (Mathes, 1981, p.69), previous research has shown that play can help meet essential psychological needs such as safety, control, and belonging. Within this framework, digital play has been explored in connection with pediatric cancer treatment. That said, as discussed by Von der Heiden et al. (2019, p.2), digital games can provide children with escape and a sense of control in otherwise unpredictable medical settings.

Even though most existing research focuses on the perspectives of patients and families, it pays limited attention to the views of health providers. Their insights have yet to be studied despite their key role in guiding the emotional and physical adaptation of children throughout the treatment process. This creates a gap in our understanding of how digital games are perceived as therapeutic tools by those responsible for supporting psychological well-being.

This study addresses that gap by focusing on the perspectives of health providers, with an angle on psychology and mental health experts in pediatric oncology. By doing so, it provides a broader viewpoint on how digital tools can support pediatric cancer patients in their overall well-being and enhance their quality of life while in treatment.

1.2 Societal Relevance

In 2024, more than 400,000 children were diagnosed with cancer worldwide, and this number has remained relatively stable over the past few years (ACCO, 2024). In general, treatments are long and intense, involving multiple stages like chemotherapy, radiation, and surgery; however, each case follows different stages. It is also important to acknowledge that these experiences don't just affect the body, but they often leave long-lasting emotional side effects. Research shows that many young patients struggle with anxiety, depression, and other mental health challenges, even after they've finished treatment (Datta et al., 2019, p.6; Wakefield et al., 2009, p.263). These issues affect not only the child but also their families, who often carry a heavy emotional burden.

Many studies have been carried out to find non-invasive alternatives to improve patients' well-being. For example, one way to alleviate the emotional burden experienced by pediatric cancer patients is by incorporating digital play into the care process. The University of Utah created a game called *Empowerstars!* to help children feel more in control of their journey and boost their emotional well-being (Bruggers, 2018, para. 3-9). On the other hand, organisations like *HopeLab* have also developed games focused on improving health outcomes and emotional resilience in young people (HopeLab, n.d, para.3). These tools can offer low-cost, engaging, and accessible alternatives to more traditional therapies, such as medication or counselling. This is especially important in places where access to mental health care is limited.

That said, we still don't know enough about what health providers think about these tools. Their views matter because they are the ones supporting children through treatment and helping them adapt emotionally. Understanding how these professionals perceive the use of digital games can contribute to the understanding of the value of their use by pediatric cancer patients for their mental health and emotional well-being. It can also help public health organisations and policymakers design better programs that actually meet the needs of both patients and healthcare providers. This study focuses on Spain, where there is a foundation called Juegaterapia that facilitates access to digital games among other forms of play for hospitalised children (Juegaterapia, 2025, para. 1). As a result, professionals in these hospitals are regularly exposed to children engaging with these tools during treatment. This makes Spain a relevant setting to explore how health providers experience and assess the role

of digital play in pediatric oncology. This study aims to provide those insights and, in doing so, contribute to building more supportive, innovative, and accessible care for children with cancer.

1.3 Chapter Overview

The chapters in this study are structured as follows: The second chapter provides a review of previous studies on digital play in pediatric cancer care, including research on pain management, emotional regulation, and the social benefits of video games for young patients. This chapter also outlines the theoretical framework of Maslow's Hierarchy of Needs, which forms the basis for understanding how play, particularly digital play, can help meet the emotional needs of pediatric cancer patients and improve their well-being. The third chapter details the research methodology, data collection and analysis. A qualitative approach is employed, where in-depth expert interviews are conducted with health providers within oncology departments to gather their insights on the role of digital games. The data is then analysed using thematic analysis, allowing for the identification of key themes and patterns related to the use of digital games as a therapeutic tool. The fourth chapter presents the results of the analysis, including the interpretation of the data in relation to the research question. The findings are discussed in terms of how health providers perceive the impact of digital games on pediatric cancer patients at different stages of their treatment journey. These emphasise both the benefits and challenges associated with digital play. Finally, the fifth chapter concludes the paper by providing an answer to the research question and offering a general theoretical discussion of the research findings' implications. The chapter also discusses the study's limitations and suggests areas for future research in the field of digital play in pediatric oncology care.

2. Theoretical Framework

This chapter outlines the theoretical framework guiding this research. It is divided into three sections: play as a concept and its relevance to childhood development; digital play and its specific impact on pediatric cancer patients; and the role of healthcare professionals in oncology contexts. This section tackles previous studies, which were used to establish a solid basis for the research. The first section examines how play has been defined and understood in connection to emotional, cognitive, and social development, which are three areas essential to how children cope with illness. Furthermore, the second section discusses digital play using research that explores its benefits and distinctive characteristics when implemented in the pediatric oncology field. The third section reviews literature on the role of health providers. It delves into how therapeutic play works hand in hand with clinical interventions to help reduce anxiety, support emotional processing, and, at later stages, reintegrate into everyday life.

2.1 Play, Cancer Patients and Well-being

This study focuses on gathering the perspectives of health providers on how digital play might support the psychological well-being of pediatric cancer patients. However, to begin with, it is essential to look at how non-digital forms of play have already been studied in this context. Before moving forward, it is essential to establish an understanding of play. Play is, in some ways, described as a fundamental activity encouraged by enjoyment that strengthens individuals both physically and mentally, leaving a sense of further need to play (Eberle, 2014, p. 231). Nevertheless, it has proven to be a varied concept that can manifest in many different forms, both structured and unstructured, as defined by various scholars. This definition will guide the discussion as the study shifts toward exploring digital forms of play and their relevance in pediatric oncology care.

Huizinga (1938, p.21) defined play as a free activity that occurs in the usual daily life. The historian argued that play is a form of cultural expression and an environment outside of reality. This philosophical perspective aided in viewing the term as a developmental tool. From a psychological perspective, play can also be seen as a means for emotional and social growth. Piaget (a well-known figure in developmental psychology) defined play as essential

for cognitive development, especially in the early, formative years of a child's life (Garwood, 1982, p.3). Through play, children can learn more about their surroundings, experiment and build their understanding of social norms and morals. Play also involves the incorporation of new information from previous experiences, further evolving their cognitive flexibility. Both definitions view play as a crucial element for a child's growth and a form of expression; however, historians perceive it as a form of expression and do not consider aspects beyond cultural impact. Nevertheless, Garwood (1982, p.3) views play as an ongoing evolution of a human being's understanding of the world and themselves.

More recently, the concept of play has slightly changed and shapeshifted. Contemporary theories on children's psychological well-being and development emphasise that play facilitates critical skills, including problem-solving, social interaction, and emotional regulation (Yogman et al., 2018, p.6). Although the initial concept of the word 'play' remains similar, modern authors have adapted the concept to fit the new possibilities within this children's source of entertainment and development. For instance, authors describe play as a fundamental activity for developing imagination and resourcefulness (De la Hera & Sanz, 2021, p.40). Burghardt (2012, p.13) further expanded on the biological and evolutionary basis of play, therefore offering a framework that includes five key characteristics of play. It is not fully functional, spontaneous, pleasurable, voluntary and repetitive. These elements allow us to distinguish play from other behaviours and consider intrinsic rewards such as fun or joy. The author views play as a contributor to a child's emotional regulation and creative thinking. His criteria also highlight the importance of play in decreasing stress, which is especially relevant to this study targeting childhood illness. This view aligns with Huizinga's definition of play being separate from reality and having no immediate practical function, yet still playing a vital role in developing adaptive behaviours. Several contradicting definitions make it hard to form a specific one for play; however, for the sake of the study, the two most relevant definitions are suggested by Yogman et al. (2018, p.6) as well as Burghardt (2012, p.13). Both definitions combine to tackle 'play' as a distinctive behaviour used to develop essential skills during the formative years of childhood. These serve as a basis for comprehending how play can help develop skills for survival in less common contexts, such as illness, making them the ideal contributors to the well-being of cancer patients.

Furthermore, numerous investigations have explored the potential of traditional play (e.g., art, music, or role-playing) to support young people in coping with and managing the emotional and psychological challenges of cancer treatment (Nunns et al., 2018, p.10; Derman & Deatrick, 2015, p.2). These non-invasive interventions have been shown to reduce anxiety, improve mood, and create moments of normalcy during a highly disruptive time. By way of example, a systematic review carried out by Godino-Iáñez et al. (2020) examined play therapy among hospitalised children. Through their work, the authors discovered that play was highly effective in decreasing anxiety, fear, and pain, and in improving attitudes, behaviour, and cooperation among the children when receiving treatment.

Cancer treatment is a multi-stage process that includes diagnosis, chemotherapy, radiation, surgery, and sometimes stem cell transplants (Volberding et al., 2021, p.4). Each stage has its own set of physical and emotional challenges. During chemotherapy, for example, children may experience fatigue, nausea, or hair loss, while surgery or radiation can lead to prolonged recovery periods. These treatments disrupt their daily lives, making it harder to maintain a sense of normalcy and engage in play (De Lima et al., 2015, p. 77).

In the context of children undergoing cancer treatment, play becomes a coping mechanism for the improvement of psychological and emotional burdens associated with their treatment. Studies highlight that due to hospitalisation and long stays, children's social life quality significantly worsens, given the physical limitations and prolonged isolation (Haiat et al., 2003, p. 211). These are direct problems that can impact healthy play for children in these formative years. Research also suggests that play for hospitalised children can serve as a medium for understanding their treatment journey (Haiat et al., 2003, p. 211). As the author describes it, they are able to turn themselves into active individuals through play due to the liberties this developmental act gives them. This argument is further reinforced by another author who depicts play as therapy (Hewes, 2014, p. 288). It is a way for children to eliminate their fear and stress, consequently learning how to manage their emotions. In other words, engaging in play provides a safe and controlled environment for children to cope with heavy and unfamiliar emotions and situations.

Moreover, several studies on the role of play for pediatric cancer patients have confirmed that it has a great impact on both psychological and physiological well-being. De Lima et al. (2015, p.81) conducted a study on the importance of play in oncology that concluded it is a pathway for positive feelings such as joy, distraction, and emotional support.

Play activities such as games and using toys not only relieve children from the stress of medical treatment but also help them handle negative emotions towards the illness, like sadness or fear. In terms of the psychological aspect, mental illnesses can create significant setbacks at different stages of the treatment journey. Datta et al. (2019, p.6) discuss that anxiety and depression are the most common disorders pediatric oncology patients present during different stages of their treatment. The article briefly mentions how the absence of play can be a sign of an unhealthy child. Haiat et al. (2003, p. 210) also supported this argument, noting that when a child is not active and playing, it is often because they are not physically healthy.

A theory that could serve as a framework for this study to structure the discussion of the value of the use of play by pediatric cancer patients with healthcare professionals is Maslow's Hierarchy of Needs. This motivational theory classifies different needs into five stages, with the basic physiological needs presented at the bottom of the pyramid (Mathes, 1981, p.69). The pyramid then works its way up from safety, love/belonging, and esteem to self-actualisation. In this context, play addresses the lower levels of Maslow's pyramid, fulfilling basic needs for safety, emotional support, and belonging. It also helps move towards higher levels, such as self-esteem and self-actualisation, which are critical for the overall well-being of cancer patients, as a right state of mind can significantly improve their outcome.

My study aims to address how digital games contribute to the overall well-being of pediatric cancer patients through the health providers' lens. Existing research has explored the benefits of play, particularly in reducing stress or improving emotional expression. However, most of these studies focus on non-digital forms of play and often examine isolated moments or short-term effects. Few have looked at the broader, long-term role of play throughout different phases of treatment, or considered the professional perspectives of those supporting the child's psychological journey. This is where my study adds to the conversation. I will examine how health providers view the role of play, especially digital play, across the full trajectory of pediatric cancer care.

2.2 Digital Play and Cancer Patients

In the field of pediatric oncology, digital play has emerged as a response to specific constraints of treatment, complementing the existing traditional forms of play. As presented by Alotaibi (2024, p.2), the author describes digital games as a form of play that can help pediatric cancer patients cope with heavy emotions such as stress by providing a sense of control and engagement. This section explores the benefits and functions of digital play for young cancer patients by drawing on existing literature to establish a foundation for the rest of the study.

Across numerous studies, digital games have been linked to emotional relief during treatment. For instance, digital play has been illustrated as a tool to manage stress, distract and contribute to short-term mood improvement (Puig et al., 2020, p.2). Literature suggests that pediatric cancer patients actively consume digital games to self-soothe, disengage from pain and prepare to interact with medical staff (Puig et al., 2020, p.5; De la Hera & Sanz, 2021, p.44). These effects indicate that digital play provides children with psychological mechanisms to navigate uncomfortable environments (such as medical environments). Other studies have also demonstrated that digital play serves as a means for children to process complex emotions by simulating alternative outcomes within a game, making it a safe space with no real-life consequences (Hewes, 2014, p.1). The emphasis on short-term relief is not enough. These patterns suggest a more stable emotional function, and it is this broader potential that remains underexplored in long-term pediatric oncology care.

From a theoretical standpoint, these ideas align with the lower section of Maslow's Hierarchy of Needs (Mathes, 1981, p. 69). Children use digital games to re-establish their sense of safety, familiarity and mental stability while being exposed to uncertain and unpredictable environments. This connection between emotional relief and basic psychological needs supports the idea that digital play is not auxiliary to treatment, but rather central to how children cope. Using digital play as an emotional reset sets the tone for further engagement in treatment. This also reflects the foundational idea developed by Ruggiero (2000, pp. 8-9), where media use is driven by need satisfaction. The Uses and Gratifications Theory (UGT) applies here directly. Pediatric patients use digital games to fulfil emotional and psychological needs based on their own rhythms and preferences. These include distraction, self-expression, control and emotional release.

The notion of control deserves specific attention. It is crucial to acknowledge the drastic changes children go through while they are under cancer treatment. They lose control over their schedules, environment, their identity and in some cases their physical appearance. Digital play counteracts these negative experiences by reintroducing a form of agency. As patients can choose games, explore virtual worlds or generate their own avatars, it builds a sense of ownership. Von der Heiden et al. (2019, p.2) found that video games are particularly effective in providing emotional release for children in stressful or traumatic environments, as they allow immersion in worlds separate from medical challenges. These experiences are not accidental. They reflect intentional engagement by the child, which is at the core of UGT.

Another vital function is social connection. Children with cancer are often isolated from their peers due to hospital stays and treatments. Multiplayer video games offer platforms for interaction beyond hospital walls. Barrett et al. (2020, p. 2) view this as a way to rebalance themselves amidst chaotic and isolating medical routines. This function, often underemphasised, plays a role in preserving social identity and belonging, elements which Maslow identifies as central for emotional health.

Another key strength of digital play is its adaptability to different stages of the treatment journey. According to De la Hera and Sanz (2021, p.42), digital games fulfil different roles depending on the phase. During inpatient care, they provide comfort and distraction. During isolation, they offer emotional relief. During remission, they foster social reconnection. This shift in function links back to UGT Ruggiero (2000, p. 5). Digital play changes with the patient's emotional needs. Unlike traditional therapy, games can be paused, resumed, restarted and chosen, which provides a flexible form of support initiated by the child, not the clinician.

Cognitive stimulation should be considered just as much as emotional benefits. Nijhof et al. (2018, p. 422) argue that games support the development of problem-solving skills, emotional regulation and communication abilities. These findings are consistent with developmental theories of play originally suggested by Piaget and later expanded by Yogman et al. (2018, p.6), which emphasise that play is a mechanism for learning, adapting and processing experiences during childhood. The mental benefits of digital play extend beyond short-lived distraction. They train the child in managing stress, building focus and engaging socially, which are crucial skills during and after treatment.

Existing research on digital play in pediatric oncology mainly addresses patient or parent perspectives. The emotional functions of digital play have often been framed as temporary coping mechanisms. However, the professional view of health providers, who observe emotional patterns across time, is rarely considered. There is limited research on how digital play can be used as a consistent psychological support strategy throughout treatment. This is where my study contributes. It centres the perspective of professionals who witness how children actually use games to regulate emotions, process medical trauma and regain control. It adds to a necessary shift in framing digital play not as a one-off distraction, but as a self-directed tool for long-term psychological resilience.

2.3 Emotional and Psychological Well-being in Pediatric Oncology

Health providers play a key role in the journey of pediatric cancer patients. They help process emotions throughout different stages, especially for young people who are just learning how to manage and control their feelings. It is crucial to acknowledge that this thesis focuses specifically on the emotional and psychological well-being of pediatric cancer patients from the perspective of health providers. One of the key therapies mental health oncology professionals implement is Cognitive Behavioural Therapy, which entails helping cancer patients manage pain by reframing distressing thoughts and engaging in different distraction techniques (Syrjala et al., 2014, p.1704). This also reflects a broader shift toward the implementation of non-pharmacological pain management techniques. In addition, their job is to ensure long-term hospital stays do not completely disrupt their growth and development by keeping them integrated into normal day activities (Datta et al., 2019, p.10). A major focus in clinical care discussed by the authors was the part psychologists play in aiding patients' transition into normal life post-treatment. They help them handle emotions such as guilt and PTSD and reintegrate into society. For instance, Fekete et al. (2012, p.27) stated that around 37% of lymphoma patients studied presented symptoms of PTSD over the last 5 years. For this reason, emotional support should be an ongoing priority. Health providers, especially psychologists and psycho-oncologists, are crucial for the improvement of such severe disorders. They are the professionals uniquely trained with the tools to help patients self-regulate and find a balanced, healthy mindset which aligns with the basic needs presented in Maslow’s Hierarchy (Mathes, 1981, p. 69).

A central aspect of the support patients can receive in oncology is oncological play, particularly in pediatrics. This therapeutic play aids children in coping with the emotional and physical stress or anxiety as early as diagnosis (Hüzmeli et al., 2024, p. 196). It becomes a tool for children to express feelings they may not fully understand. Using toys, role-playing and games, children, especially those who are too young to articulate their feelings about their illness or medical procedures, can make them feel secure and reduce emotional distress (Abdelkhalik et al., 2024, p. 40). Health providers facilitate these activities in a supportive way, making sure that children are valued and heard, as well as ensuring that children can regain a sense of control over their environment and situations. Moreover, oncological play can better prepare children for medical procedures. Certain aspects of the treatment can be introduced in a non-threatening way, which results in less fear and anxiety related to hospital visits and interventions (Godino-Iáñez et al., 2020, p.14).

The tasks fulfilled by health professionals in oncology go beyond working with pediatric patients. Bashkin et al. (2023) carried out a study from the patient's angle on the role of health providers and their impact on patient care. The authors highlighted the importance of health providers as figures who see beyond the disease and provide personalised solutions (Bashkin et al., 2023, p.4). Previous research from numerous authors suggests that one of the main tasks of health providers is to help patients manage the psychological and emotional distress caused by the chronic disease. This includes addressing feelings of fear, anxiety, depression, and uncertainty, which are common during the diagnosis and treatment phases (Hüzmeli et al.,2024, p. 196; Ibrahim et al., 2020, p. 234).

In addition, existing research has highlighted several benefits of incorporating psychological support into cancer care. For instance, studies have shown that psychological interventions, such as CBT, mindfulness-based stress reduction, and emotional support, can significantly improve a patient's ability to cope with the stress and other factors associated with cancer. For example, a study by Syrjala et al. (2014, p. 1709) demonstrated that psychological interventions resulted in positive outcomes. They improved pain management in cancer patients, reduced anxiety, and improved overall quality of life.

Also, among cancer patients, psychological support has been linked to better coping strategies and a decrease in depressive symptoms. Syrjala et al. (2014, p. 1705) conducted a meta-analysis that concluded that psychosocial interventions had a moderate effect on reducing depression and anxiety. This is particularly important because, as seen throughout

different studies, depression and anxiety can impact the patients' ability to engage in their treatment and negatively affect their overall health outcomes. Finally, Volberding (2021, p.8) took a different approach. The author suggested that emotional support from psychologists helps patients and families adjust to the physical and emotional changes of cancer treatment. This support improves communication and understanding within families, which are crucial parts of the patient's support system.

There is still a lack of research on the long-term benefits of psychologists' interventions on pediatric oncology patients. Especially in the last stages of their journey (meaning re-integration or end-of-life stages). Most existing studies focus on specific therapy techniques, such as cognitive-behavioural therapy (CBT). This study contributes by exploring whether digital play is recognised by health providers as a viable tool in pediatric cancer care. It will address a significant gap in both clinical literature and therapeutic practice.

3. Methodology

This chapter targets the chosen methodology used to analyse health providers' perception of digital play as a tool for pediatric cancer patients during their treatment journey. This chapter is divided into six sections: research design, sampling, operationalisation, data collection, data analysis, and credibility. First, in the research design section, the research method is described, and the purpose and reason for this choice are explained. Next, the sampling strategy is covered to thoroughly explain the established criteria, the reasoning behind them, and the interviewees chosen based on them. In operationalisation, I explain how the theoretical framework is reflected and implemented into the interview guide. Next, the data collection section explains in detail how the data was collected and, after that, analysed in the data analysis section. Finally, both the validity and reliability of the research are tackled in detail under credibility.

3.1 Research Design

This study required in-depth qualitative research to explore health providers' perceptions of how digital games impact pediatric oncology patients' emotional and psychological well-being. This is because a qualitative approach focuses on the meanings, experiences, and perspectives of individuals or groups (Flick, 2007, p. 2). Therefore, the approach prioritised the exploration of more subjective human experiences and interpretations rather than mere numbers and fixed data. As Braun & Clarke (2006, pp. 8-9) state, this approach is commonly used in psychology, sociology and education, as it allows for detailed insights into behaviours and societal patterns. Given the purposes of this study, a qualitative research design was the most appropriate approach when studying such a complex topic, as it required an in-depth understanding and had an interpretive nature (Sajjad et al., 2024, p. 3). This approach provided a thorough and detailed understanding of the topic at hand, which would have been difficult to achieve through quantitative methods alone.

The data was collected through expert interviews. As defined by Von Soest (2022, p. 278), this qualitative data collection technique is the most appropriate involving discussions with individuals possessing specialised knowledge or direct involvement in a political or social process of interest. In simpler terms, it aided in understanding more complex

decision-making processes and causal mechanisms. Expert interviews were the most appropriate given the need for a professional angle. This approach was useful in examining the nuanced views of health providers in Spain about how the implementation of video games could improve the psychological well-being of oncological pediatric patients. Moreover, open-ended questions ensured that new insights could emerge during the interview. It also allowed space for follow-up questions to be asked. Next, thematic analysis (Braun & Clarke, 2006) was implemented on the transcriptions of the interviews. It was the most appropriate form of analysis because it allowed for an in-depth exploration of several perspectives shared by health providers. Also, unlike other methods, thematic analysis was useful in uncovering patterns and connecting different data.

3.2 Sampling

Considering the nature of this study, purposive sampling was employed as the sampling method. Flick (2017, p. 29) defined it as the intentional selection of participants who meet criteria set by the researcher relevant to the research question. The goal of this method was to select relevant individuals who could provide knowledgeable insights into the topic. Through this approach, professionals can ensure that certain objectives are tackled in relation to the findings.

Delving into the criteria, the sample consisted of 7 health providers with substantial experience in the field of pediatric oncology (See Appendix C for more information). They must have worked with childhood oncology patients for a minimum of four years. This ensured that they had experience in managing long-term treatment processes, as it is one of the main gaps my study aimed to fill. Moreover, this criterion confirmed that they also had insights into the handling of the changing needs of patients during different treatment phases. Furthermore, Flick (2017, p. 29) highlights in his research that purposive sampling is crucial when the topic requires participants to be specifically relevant to it. This meant that for this study, factors such as age are not necessarily significant as long as the years of experience remain at five years or above. Moreover, gender was also not a contributing factor for the selection; however, including both men and women also added another layer to the perceptions behind digital game use as a therapeutic tool.

These professionals were recruited from three different public and private hospitals based in Madrid: La Paz, Hospital Universitario Quirón de Madrid and 12 de Octubre. All three collaborated with a foundation called Juegaterapia, which facilitates digital play technologies (consoles and tablets) as well as videogames to children treated in these hospitals. Children can also take these technologies home during outpatient care. This facilitated access to professionals who treat children who have regular contact with digital play during their cancer journey.

An email with a detailed explanation of the study was sent to the Juegaterapia Foundation as well as different entities relevant to the study, such as personal contacts within the institutions or derived from them. I explained the purpose of the study and the importance of the health provider's perspectives. Later, I implemented snowball sampling as a complementary sampling method, which entails using interviewees as a vessel to find other potential participants that could be relevant to the study (Flick, 2017, p.28). I asked if they might refer me to other colleagues or contacts working in the three hospitals mentioned earlier. I made sure to communicate the criteria I had established to filter out any candidates that were not useful to my study. These included health providers with less than five years of experience, little interaction with patients, or unfamiliarity with the concept of digital games as a non-invasive treatment for pediatric oncology patients.

3.3 Operationalisation

Regarding the operationalisation, this study was conducted using an interview guide to ensure that the data gathered addressed the research question. This was how health providers perceived the use of digital games by pediatric cancer patients at different stages of their treatment. Moreover, the interview guide was constructed based on the theories mentioned in the theoretical framework, such as Maslow's Hierarchy of Needs (Mathes, 1981) and UGT (Ruggiero, 2000). The main objective of the guide was to obtain detailed information from the professionals' experiences with digital games in pediatric oncology, while also giving space for follow-up questions to be asked. The interview guide also highlighted the limitations and difficulties related to the use of digital games as well as the emotional and psychological impact of these on patients.

Each section that composed the interview guide tackled a different aspect of the research question. In concrete, the first section was written to learn more about the participants' backgrounds and experiences. Thus, introductory questions were asked as a general overview of digital games in pediatric cancer care. An example of these questions was "What role do digital games play in the day-to-day lives of pediatric cancer patients during their treatment?" which ensured that participants had the necessary knowledge to respond to the in-depth questions in full detail (Adeoye-Olatunde & Olenik, 2021, p. 1361). This section also focused on incorporating Yogman et al.'s (2018, pp. 4-5) views on play as a tool for emotional regulation and development.

Moving on to the second section, it focused on the treatment phases and the integration of digital play. The aim was to establish the health provider's view on the importance of play in a broader sense and how it supported emotional and psychological well-being. This was constructed based on inpatient, outpatient and remission stages (De la Hera & Sanz, 2021, p.43). An example of the type of questions was "Are there any video games or game types that you have found to be more beneficial at different stages of the treatment?". This section aims to establish a foundation for understanding the broader context of play in cancer treatment as a therapeutic tool in various forms and contexts. It is important to note that this section was aligned with the theoretical framework, where play was defined as a developmental tool for children in oncology.

The third section addressed the perception of digital play in pediatric oncology. The questions targeted the health provider's expert opinions on the potential benefits of digital games as a non-invasive side treatment for children with cancer. This section's main purpose was to identify the specific advantages that digital play had over traditional forms of play (De la Hera & Sanz, 2021, p. 42). The approach was to understand the perceived value given to games in emotional regulation as a form of release and stress reduction, which studies proved essential for children during their treatment journey (Alotaibi, 2024, p.2).

The challenges and limitations of digital play in pediatric oncology were examined in the fourth section. An interesting aspect to explore within the study was to find potential concerns, including addiction or damaging gaming behaviours, that might impact the therapeutic use of digital games. Hence, questions like "Are there concerns regarding the potential negative psychological impacts of using digital games?" Were asked. This part made sure the analysis was unbiased by discussing both the advantages and disadvantages of

using digital games in a medical setting. It completed another essential aspect of the research: the consequences of digital games on children's psychological health.

The last section tackled the experts' perspectives on the future role of digital games in pediatric oncology. Asking questions such as "Do you see any innovations or new developments in this field?" aimed to understand how professionals perceived the potential for growth in this area, offering insights into future directions for both research and practice.

The interview guide's structure, based on these five sections, followed a clear journey from general to more specific, thematic questions aligned with the study's theoretical framework. The questions were crafted to ensure the analysis could be carried out through thematic analysis. This way facilitated the identification of patterns and themes that emerged from the professionals' responses. The analysis was structured to address each section of the interview guide. It focused on the key themes and insights relevant to understanding the psychological role of digital games in pediatric oncology treatment.

3.4 Data Collection

In terms of data collection, semi-structured expert interviews were the most appropriate method for this study. This approach provided the flexibility necessary to explore the participants' insights while ensuring that key topics relevant to the research question were covered (Adeoye‐Olatunde & Olenik, 2021, p. 1363; Von Soest, 2022, p. 278). Given the geographical distance between me and the participants, online interviews were set up using Zoom. The platform served as a reliable medium for communication and made it easier to record the interviews. Time was not an issue, however, as both the interviewees and I were in the same time zone, just different countries. I scheduled these interviews throughout the month of April, aiming to conduct three interviews per week during the last two weeks and one in the first week of May.

The interviews were conducted in Spanish, and I transcribed the interviews automatically using Zoom's transcription feature, making it very easy to be fully present in the conversation and not concerned about time restraints or fully relying on the recordings. Nevertheless, to ensure the accuracy of the transcriptions, I also recorded the sessions with the VoiceNote app. This allowed me to double-check the content in case any information was

incorrectly transcribed or translated. I saved all recordings and transcriptions in documents on both my desktop and Google Drive for easy accessibility and as a backup in case there were any issues with either the laptop or the internet. These steps helped me efficiently collect and manage the data while ensuring its accuracy.

Before each interview, participants received consent forms explaining what the study was about, how the data would be used, and what their rights were. Everyone signed a consent form before taking part. Following ethical guidelines, I anonymised all transcripts by removing their names and substituting them with others to protect confidentiality. These steps ensured that the data was handled responsibly throughout the process.

3.5 Data Analysis

Thematic analysis was implemented to analyse the interview data. This approach was the most adequate, as it provides a detailed examination of different patterns and emerging themes within qualitative data (Braun & Clarke, 2006, p.8). This analysis was particularly useful when analysing complex data. It focused on identifying, analysing and reporting patterns relevant to the research question. This method enabled me to organise the interview responses and understand the health providers' perspectives on the use of digital games during different phases of pediatric cancer treatment. Identifying themes within the data, both explicit and implicit views of the participants were captured. To conduct the analysis, I followed the six steps described by Braun and Clarke (2006, pp. 16-23). Firstly, I immersed myself in the data by reading through the transcriptions at least three times, which allowed me to identify initial concepts that I could later code. Secondly, initial codes were created by identifying meaningful sections of data that related more to my research question. I coded both manifest and latent content (explicit statements and underlying meanings). Then, I examined themes and grouped them into similar codes. I primarily focused on spotting patterns across the dataset. The themes were reviewed to ensure they accurately reflected the data and were coherent. At this point in the process, some themes were split and refined to make a clear distinction between them. Subsequently, I defined and named the themes using ATLAS.ti to generate a code tree (Appendix B) for the refined codes to make the research easier and clearer for future studies. Finally, the analysis was written, making sure that specific quotes from the data supported the themes.

3.6 Credibility

To ensure the reliability and validity of this study, several steps were taken to minimise bias and remain consistent. Reliability in qualitative research refers to the consistency and dependability of the data collection process (Silverman, 2011, p. 20). To ensure the reliability of this study, I made sure to be transparent about the procedures followed throughout the data collection and analysis. For example, the interview process remained the same through the use of a structured interview guide. The guide included questions aimed at covering all essential topics related to the research question. By maintaining a consistent set of questions for each participant, I ensured that similar data was gathered across interviews. Adding to that, I also kept a record of the steps in the process, such as selecting the participants and scheduling the interviews, thus making sure my work was reproducible in the future.

Validity was demonstrated as I took steps to limit the impact of subjectivity on the final results. To avoid personal bias impacting the analysis, I used a precise methodological framework. First, using an interview guide was helpful in maintaining the study focus and lowering the potential deviation from the objectives. In the later stages, a codebook was implemented during the data analysis step. Through the codebook, it was easier to ensure data uniformity. This way, the themes were also based on the interview data rather than my personal interpretations. Following these methodological steps provided neutrality and ensured the findings' credibility and validity.

In addition to these strategies, ethics were considered. This meant it was key to obtain informed consent from all participants. Therefore, a consent form was provided, which clearly stated the purpose of the study, the voluntary option to participate, and the confidentiality of the data. All participants were given the opportunity to ask questions before agreeing to participate, further contributing to the validity of the study.

Finally, I met and discussed the process with my supervisor on a regular basis. Her external comments helped to improve the interview guide, verify ethical compliance, and certify that the analysis followed the proper methodology. The supervisor's views added an extra layer of confidence that the study followed acknowledged qualitative research criteria, ensuring the findings' reliability and validity.

4. Results

The following section tackles the themes that were identified after conducting a thematic analysis of the interviews: (1) Emotional Relief from a Health Provider's Lens, (2) Games as Tools to Shape the Treatment Journey, (3) Games as a Medium for Connection and Shared Belonging, (4) Practical Concerns, and (5) Digital Games and the Preservation of Identity. Each of these themes also contains subthemes that delve deeper into the specific patterns, ideas, and reflections across the interviews. In addition, a simplified version of the final code tree can be found in Appendix B.

This chapter is divided into four themes. To begin with, the first part explores how digital games offer emotional relief to pediatric cancer patients, especially during difficult treatment phases. In this section, health providers described how games help regulate emotions and manage anxiety, both during and outside of medical procedures. Continuing, the second part focuses on how digital play supports children's daily routines and physical rehabilitation. They are viewed as flexible tools that adapt to pediatric cancer patient's changing emotional and physical needs. The third part addresses the role of digital games in encouraging social connection and belonging. This is because patients spend a long time isolated or hospitalised. Health professionals noted how games create bridges between children and their parents, peers, and even medical staff. The fourth part presents the practical concerns expressed by professionals, such as screen dependency, unequal access to resources, and the need for better personalisation in the use of digital games.

4.1 Emotional regulation from a health provider's lens

To begin with, a typical pattern that emerges across all four interviews is the shared perception that digital games provide an emotional sense of relief to pediatric cancer patients. It is not framed as an extra benefit but rather a necessity and complementary to the invasive treatments. Pediatric cancer patients are often exposed to unfamiliar situations, which can lead to feelings of anxiety, fear, and stress. This theme addresses the study's objective by examining how professionals evaluate and consider the emotional benefits of digital games for patients: (1) Coping Tools During Emotional Distress, (2) Catalysts for Positive Mood

Changes, (3) Emotional Relief Beyond the Child, (4) Emotional Reconnection and Motivation. The following subthemes then dive into how digital games are used as tools for the emotional and psychological improvement of pediatric cancer patients during their treatment.

4.1.1 Coping Tools During Emotional Distress

A consistent idea shared across six of the interviews was that digital games serve as emotional tools children turn to during moments of distress. These are not merely pastimes. Health professionals described them as therapeutic tools that reduce anxiety and offer psychological relief during medical procedures. For instance, Laura, a childlife specialist at La Paz, explained, "There is more stress than pain,"[1] referring to how emotional tension often outweighs physical discomfort. In this context, digital games were not framed as optional entertainment but as active instruments to manage psychological discomfort. They help shift the patient's attention and reduce emotional barriers that could otherwise prevent cooperation with treatment.

Eliana, a psychologist at 12 de Octubre, Laura, and Mar, a nurse at Quirón,, specifically discussed how games can ease procedures such as patch changes or catheter cleaning. Laura noted, "It is a brilliant technique… it is also used within procedures such as changing the patches or cleaning the catheter." The interactive nature of games gives children a sense of focus and agency at a time when most control is taken from them. This idea links directly to Maslow's notion of emotional safety. Providing a way to emotionally regulate and reduce fear, digital games fulfil a basic human need for stability and control in high-pressure settings (Mathes, 1981, p. 69).

Furthermore, four out of seven professionals identified anxiety as the most frequent psychological response to treatment. Eliana remarked, "Fear and anxiety are the most prevalent." She underlined how children struggle to process the complexity and unfamiliarity of hospital environments. According to Laura, "Having a child playing a video game makes it much easier than other distractions and therefore the anxiety decreases." In this sense, digital

[1] Translated quotes from Spanish to English

games are employed deliberately and tactically, helping patients to refocus and remain emotionally grounded.

4.1.2 Catalysts for Positive Mood Changes

Besides acting as tools for coping, digital games were often described as catalysts for improving children's emotional states. Their capacity to bring immediate joy or calmness was viewed as essential during difficult phases of treatment. Mar provided an anecdote about a post-transplant patient, stating, "He was easily irritated and had a hard time during the hospitalisation, but as soon as he saw the PlayStation, he smiled ear to ear." This moment of visible emotional shift illustrates the role of digital games in reintroducing positive affect in otherwise heavy environments.

This emotional change was not limited to the child. Six professionals mentioned that when children felt better, the entire atmosphere of the room shifted. Digital games were viewed as "bargaining tools," especially when verbal communication or encouragement failed. Laura stated, "Video games are a bit like their language, therefore it is marvellous." The ability of digital games to speak to children in a way adults sometimes cannot shows their emotional resonance.

Additionally, Eliana described how educational video games help children transition to normality, showing their dual function as tools for emotional and cognitive readiness. This introduces the idea that digital games are also shaping understanding and expectations. For this reason, they were described as a "language" through which psychological readiness and emotional balance can be established. Interestingly, Oscar, an oncologist at Hospital Universitario Quirón, also described digital games as their "language". This depicts how valuable and important it is for health providers to have good communication with their patients on a personal level, beyond the clinical aspect. Being able to interact in a professional context can bring about a sense of familiarity and closeness between both. This bond of trust then becomes meaningful as the patient feels at ease when they visit the hospital or interact more often with health providers. Once again, hostility is broken, and a safer, comfortable environment is built. This also makes it easier for pediatric cancer patients to

better tolerate and understand difficult procedures and navigate their treatment journey with more confidence.

4.1.3 Emotional Relief Beyond the Child

The professionals interviewed also highlighted how the benefits of digital games extend beyond the individual child. This perspective, shared by Laura and Oscar, acknowledges that games often influence the dynamic within the room or family. Laura explained how the child's engagement helped ease the situation for parents and staff alike: "It's better to spend hours there playing than crying… or anxious or scared." Here, emotional relief spreads beyond the patient, setting a calmer tone for the whole environment.

Oscar mentioned a project he worked on where patients could use avatars to experience treatment processes beforehand. This helped manage expectations, reduce uncertainty, and build emotional preparedness. These kinds of initiatives were seen as particularly useful for both children and their families, since reducing one's anxiety often had a ripple effect on others. Games, in this sense, function not just as internal coping tools but as facilitators of emotional coherence within the larger clinical setting. This is another approach through which digital games are implemented as tools to educate and bring families closer together.

This observation adds depth to the emotional utility of digital games. It also aligns with the Uses and Gratifications Theory, which posits that individuals seek out media to satisfy specific psychological needs. Here, both patients and those around them benefit from the emotional tone digital games introduce into an otherwise sterile or distressing environment.

4.1.4 Emotional Reconnection and Motivation

Finally, health providers pointed out how digital games helped re-engage patients who had become emotionally withdrawn. Over the course of treatment, children may become passive or disinterested, which can affect their mood and willingness to interact. Five out of

the seven professionals stated that digital games helped bring back that sense of presence and motivation.

Eliana shared an anecdote from a parent who saw their child “click back to life” after starting to play. This language captures the emotional awakening that games can stimulate. Oscar also described how patients remembered their hospital experience not through treatment pain, but through gameplay: “In the end, what the child remembers most about that experience… is that they played. And that is very powerful.” These memories, although formed in difficult contexts, allow the child to retain positive emotional associations.

Digital games are, therefore, not just about emotional avoidance. They offer space for emotional reconnection and cognitive presence. As Laura explained, “They gravitate to each other, they spend hours playing, and it’s wonderful.” This points to the emergence of positive emotions like curiosity, joy, and even social bonding during recovery. The presence of these emotions suggests that video games are capable of restoring not only mood but also identity and motivation. According to the Uses and Gratifications Theory, this aligns with the idea that media can be used to seek out personal significance and reconnection in challenging moments.

The insights shared by health providers resonate with broader definitions of play as a tool for emotional development and regulation. According to Burghardt (2012, p.17), one of the core characteristics of play is that it offers a spontaneous and pleasurable outlet for emotional release. In this context, digital games provide not only a sense of fun but also fulfil a crucial psychological function for children under distress.

4.2 Games as tools to shape their treatment journey

A common theme that emerged in all seven interviews is the idea that digital games support pediatric cancer patients throughout their treatment. They are not just moments of fun but are flexible tools that adjust to the child’s changing needs. Health professionals explained that the use of games varies based on the patient's emotional and physical state. Their value does not depend on a specific medical stage but on the individual experience of the patient. This theme enhances the study by examining how digital games promote autonomy, restore routines, and encourage physical activity at various stages of care. The following subthemes

explore how digital games fit into daily treatment practices: (1) Restoring Agency in Moments of Powerlessness, (2) Tools to Structure Time, (3) Tools for Movement and Motor Coordination. These insights clarify how professionals view games as adaptable tools that enhance the child's overall well-being during treatment.

4.2.1 Restoring Agency in Moments of Powerlessness

A recurring pattern that emerged during the interviews was how digital games offer children a sense of control in situations where they feel most powerless. Health providers described how, in moments of isolation or emotional vulnerability, children often lose all sense of agency. This was particularly relevant after treatments such as bone marrow transplants, where patients are kept in isolation for long periods and have limited contact with others. These periods were referred to as dense in terms of emotions, where the patient is alone in a sterile room for days or even weeks. This is where digital devices also facilitate play, as they are much easier to disinfect after use than other toys, which are not allowed in the room. In that same environment, children are deprived of routine, spontaneity and all but the most minimal human contact. In this context, digital games were framed not just as tools for distraction but as opportunities to make choices and regain ownership over an aspect of their environment.

Laura stated, "A child who is in control of the situation, which I think video games give them that part." The Childlife specialist believed that allowing the child to choose a game or continue a level was a small but powerful act of autonomy. These moments of choice are rare in the hospital setting, where most decisions are made for the patient. Therefore, digital games were described as a space where the child can exercise decision-making, even if in a limited form. This form of control stood out as essential, not optional, during highly vulnerable phases of treatment.

Moreover, Samantha also acknowledged the importance of this sense of engagement. "When the children also feel bad, the fact that they can sit with their tablet to play something, in the end, stimulates their brain and is better than them not being hooked on anything." The statement underlined how using video games in the correct way can bring about more stimulation for patients, even if they feel weak or low. It also depicts a positive angle of the usual demonisation of video games for their addictive nature. The mental engagement was

described as a way to preserve a sense of normalcy when everything around them feels out of reach.

The idea of restoring agency also aligns with Maslow's theory of emotional security and psychological fulfilment (Mathes, 1981, p. 69). While basic physical needs are met through medical care, the need for autonomy is often overlooked. Digital games, as described by the interviewees, fill this gap by letting the child make decisions, engage with content, and remain mentally active during otherwise disempowering circumstances. In short, digital games were seen as more than entertainment. They were described as small structures of choice in an environment where control is rarely given. Through play, children momentarily shifted from being passive recipients of care to active participants in their own experience. For professionals, this shift was not just beneficial but rather essential to helping children endure the emotional impact of isolation.

4.2.2 Tools to Structure Time

A pattern that stood out across all four interviews is that health providers do not believe digital games are more relevant to one specific moment in treatment or phase. Instead, their value and relevance shift depending on the emotional and physical state of the patient at different points throughout the treatment journey. Rather than referring to distinct medical stages such as chemotherapy or post-surgery recovery, professionals framed game use as circumstantial, which means intervening when the child needed emotional or cognitive support. This subtheme explores the fluid nature of digital games across treatment and how their perceived benefit depends more on the child's internal needs than the clinical stage itself.

From a professional viewpoint, adaptability is what makes games consistently useful. These moments were often marked by emotional exhaustion, restlessness and physical restriction. As Mar explains, moments of extended isolation or limited mobility were when gameplay became most valuable: "If they have to go through a very long hospital stay… it helps them." In these cases, games offered more than a distraction. They provided stimulation when patients were alone, often unable to move freely or interact with others due to being immunodeprived (low immunity). What professionals described was not simply play, but an

activity that helped fill a psychological and social void to maintain a positive atmosphere for their overall well-being. Games structured time, gave patients something to focus on, and most importantly, allowed them to do something that felt normal. Instead of waiting around for treatment or check-ups, children had something to focus on and return to each day. Five out of the seven health providers brought up this point. They described how digital games gave patients something to do with purpose, especially during long hospital stays.

Another important insight was that the timing of gameplay was never linear. Professionals repeatedly clarified that it was not about the medical stage, but the child's emotional state. Samantha summed this up by stating, "It depends more on the child than on the moment of treatment." This illustrates how digital games adapt to each patient's day-to-day reality and how personal it is to each individual. Some children feel well one day and worse the next. Laura noted, "There are children who are better one day than the other, and that changes how they play." These variations meant that children engaged with digital games according to their mood, energy and mental space. Some days the game served to calm them down, while other days it helped them express frustration or simply pass the time. This spontaneous and intuitive engagement shows that digital games function as tools for emotional self-regulation. This perception positions digital games not as static interventions but as flexible tools, capable of taking on different roles depending on the child's state of mind.

4.2.3 Tools for Movement and Motor Coordination

In addition to emotional adaptability, digital games were also seen as helpful for physical rehabilitation. Mar also introduced the idea that in certain phases, particularly those tied to physical rehabilitation, games like Wii could support movement and motor coordination: "They can use tools like the Wii that make them exercise." This was an important insight, as it demonstrates how digital play shifts from emotional support to physical recovery depending on the situation. The function of the game is no longer just entertainment, but part of a larger therapeutic approach. For some patients, using games in this way meant they would move more, comply more with the treatment, and feel more involved in their recovery. Professionals viewed this as part of a broader, multidisciplinary approach, where digital games become integrated into both the emotional and physical

aspects of care. This angle does not stop there, Oscar discussed his new project on the use of exergaming as a form of physical therapy through digital gaming. The oncologist acknowledged the gamification of medical tools as key to improving pediatric cancer patients' lives. For instance, he is currently conducting a study to improve mobility through a game called Ringfit. They study the brain activity of patients while they interact with specific games, including Minecraft. However, they are still investigating and do not have concrete results.

Overall, health providers did not refer to medical stages when discussing digital games. Instead, their reflections were patient-centred. They focused on whether the child was struggling emotionally, feeling bored, isolated, or physically weakened. In those moments, the game became relevant. Its strength was precisely in its ability to take different forms depending on the needs of the child. It was this flexibility that made it a valuable and trustworthy tool across the entire treatment process.

4.3 Games as a Medium for Connection and Shared Belonging

To begin with, a consistent pattern across all seven interviews is the understanding that digital games offer more than distraction. They serve as emotional bridges, bringing children closer to the people around them and making moments of interaction feel less forced and more natural. Health professionals consistently described games as facilitating emotional closeness and shared moments between parents and children, creating new friendships among patients, and reinforcing routines that are often disrupted by hospitalisation. These functions are not framed as side effects, but as essential to the well-being of pediatric cancer patients during treatment. This theme addresses how digital games are perceived not just as entertainment, but as social tools. The following subthemes explore how professionals interpret these benefits through three angles: (1) Digital Games as a Bridge Between Children and Parents, (2) Creating Belonging Among Peers Through Play, and (3) Restoring Normalcy in Family Dynamics.

4.3.1 Digital Games as a Bridge Between Children and Parents

Building emotional closeness between the parents and their children was another pattern identified across four out of seven interviews. Many families spend long hours in hospitals; however, this does not necessarily translate into establishing a meaningful connection. Digital games are able to shift this dynamic. “Digital games have an amazing effect on their conduct and not only on children, but on their parents too, as they see their children more relaxed”. Laura explained that it is crucial to work on creating a light and comfortable environment because this leads to an overall good setting for all involved, not just the patients. Parents witnessed their children laugh, express themselves and remain entertained, providing a sense of relief. It offers a moment of normal interaction between parent and child that is not structured by medical routines. Oscar, for instance, discussed how his patients’ parents were initially sceptical and reluctant to the prolonged use of video games until they experienced firsthand how happy and alive their children were.

Additionally, Martina pointed out how parents often express gratitude. They see a change in the way their child feels towards the hospital itself, as they can now interact with other patients through digital games. This generates a sense of relief for parents. In fact, not only do they enjoy watching their kids play and enjoy video games, but they often play too. This shared experience aids in making the hospital environment less hostile, as the hospital becomes associated with the "benefit of something they love," which can compensate for the difficulties of treatment. Eliana shared this sentiment as she explained that at Quirón, they focus on providing games and consoles that can be enjoyed with the entire family, “with their siblings” to re-establish bonds that could otherwise be harder to find. Thus, digital games act as emotional connectors in hostile settings.

4.3.2 Creating Belonging Among Peers Through Play

Social connection is also crucial to a child’s development (Nijhof et al., 2018, p. 422). Therefore, the deprivation of such can be detrimental for pediatric cancer patients in the long term. Because of that, digital games were perceived as helpful instruments in helping patients maintain their friendships and connections to the outside world, especially during isolation and hospitalisation. One way hospitals attempt to alleviate this feeling is by promoting and fostering connections among patients. To exemplify this, Hospitals such as Quirón or La Paz both have specific playrooms with consoles, including Nintendo Switch,

PlayStation, or Wii, for patients to play together. Adolescents are more inclined to look for ways to stay in touch with their friends to maintain a sense of normalcy. The most popular choices among patients to achieve this were Minecraft, FIFA or Fortnite. This allows them to participate in team activities, tournaments, and share virtual experiences, which, again, contribute to their social development. Laura narrated an anecdote highlighting a child's main concern upon diagnosis, which was how to connect his console for an online tournament. As stated by Laura, “children have different priorities in life than adults”.

In addition, “Playcars” or portable gaming consoles donated by the foundation Juegaterapia, facilitate peer interaction as these are brought to isolated patients. In fact, in La Paz, upon arrival, every patient gets to choose between a tablet or a console for them to keep. This sense of reward also changes the perception or attitude children have towards their illnesses and treatments moving forward. This sense of shared experience may also contribute to the child's broader emotional resilience. Rather than coping alone, children cope together. In that process, the hospital becomes less defined by separation and more defined by interaction.

4.3.3 Digital Games as Mediators in Doctor-Patient Relationships

A surprising discovery was how digital games are implemented to strengthen communication between child cancer patients and healthcare providers. Strengthening communication between child cancer patients and healthcare providers is essential for effective care, and digital play, particularly video games, serves as a significant facilitator in this process.

Video games act as a crucial tool for facilitating expression and understanding in children undergoing cancer treatment. For many children, play is their fundamental language, allowing professionals to "enter the child's world" and approach them more easily. This medium provides an outlet for children to communicate and express themselves, especially when they might otherwise be withdrawn or isolated, with parents observing their children transition from isolation to being able to laugh and express themselves through video games. Moreover, video games are effectively used to explain complex medical information, such as

chemotherapy and radiotherapy, in a manner that children can comprehend more easily than purely verbal explanations.

Apart from expression, video games play a crucial role in building trust between patients and their healthcare team. Engaging with patients through games helps healthcare providers gain the patient's collaboration and establish a connection. Psychologists, for instance, sometimes play games like "Brawl Stars" or "Mario Kart" with patients to foster this connection and facilitate conversation, thereby supporting their therapeutic work

Specialised professional roles often support the effective implementation of video games for communication. Laura, who is a Childlife specialist, for example, is trained to support children in hospitals, guiding the process of play, managing pain, and encouraging expression. The professional shared that children often refuse to cooperate or communicate until the "expert in video games" arrives. They then feel more comfortable and excited to discuss topics unrelated to health or treatment. Oscar argued that there should be “at least one specialist of this type in each hospital”. This approach ensures that video games serve as a vital bridge in pediatric oncology, fostering a more open and effective communication environment by addressing children's emotional needs and helping them cope with the challenges of treatment. Also, having trained specialists should be the norm, just like for any other treatment. The oncologist pointed out that with the implementation of digital games should be viewed and treated as one more treatment, regulated and managed by experts and not simply handed to the patient and given to the parent to control and regulate.

4.4 Practical concerns

To conclude the findings, a recurring pattern across all seven interviews was that while digital games are seen as emotionally and psychologically beneficial, there are also concerns regarding their use in pediatric oncology care. These concerns were not dominant, but they surfaced consistently. They reflected the professionals’ efforts to balance emotional support with long-term well-being. This theme addresses the study’s objective by exploring how health providers reflect on the ethical, behavioural, and practical limitations of integrating digital games into treatment. The following subthemes unpack different concerns: (1) Screen time and dependency, (2) Digital Divide and Unequal Access to Resources, and (3) Need for personalisation in gaming interventions.

4.4.1 Screen Time and Dependency

Given the special circumstances, screen time is significantly different for pediatric cancer patients. Usually, parents choose to minimise their child's digital device use to encourage other types of activities. However, during illness, isolation and painful procedures, the classic debate becomes obsolete, and different priorities, such as the patient's happiness and mental well-being, are prioritised. A more permissive approach is common as parents allow their children more screen time to alleviate stress and "evade" the negative aspects of their treatments. Nevertheless, there are concerns regarding the over-consumption, as pediatric cancer patients, just like any other healthy child, can become heavily dependent on gaming. Laura emphasised this issue, saying "some children scream and kick more when the tablet is taken away than for a needle stick". One again, as children's priorities vary, it is difficult to communicate to them the more negative aspects of something that brings them so much joy. All seven health providers observe that this dependency can make it difficult to "reduce that habit" when they return home. Martina also resonated with this as she described patients' perception of access to screens as an "open bar".

Also, their addictive power can generate long-term issues such as struggles with social integration or interaction in real-life settings. It also generates a sense of immediate reward, or as stated by Martina, "a terrible tolerance for frustration," making them a "double-edged sword".

To prevent unhealthy relationships with screen time, professionals recommend setting clear limits and establishing routines, similar to healthy practices for any child. This involves combining video games with other recreational activities, such as board games, puzzles, drawing, or physical exercise, particularly in the last stages of the treatment once children are no longer hospitalised. When asked about whose responsibility it was to regulate their use, six out of seven health providers said that parents have that responsibility. Parental guidance and control are considered "very important". They are the role models and guardians who ensure games are age-appropriate and that the child's life remains rich in other aspects, like social interaction and academic engagement. Despite the risks, the benefits of videogames in managing the immediate psychological and emotional challenges of cancer treatment often outweigh the drawbacks, provided their use is well-managed and monitored.

4.4.2 Digital Divide and Unequal Access to Resources

A surprising argument made by health providers was the presence of a digital divide and unequal access to resources with regard to the integration of digital games in pediatric oncology care. Some hospitals have a large funding and contribution from foundations such as Juegaterapia to help finance this tool. Nevertheless, Juan argues that there is a smaller prominent implementation of digital games at Hospital 12 de Octubre due to a "lack of resources". He also expressed "platforms of video games and also training need more funding". Laura shared the sentiment as she portrayed the use of digital games as a "privilege", highlighting that everything related to play should be accessible for all pediatric cancer patients.

Eliana also states that securing funding for specific, non-commercial applications of video games in healthcare is often a challenge because it is "not profitable". It is thanks to foundations such as Juegaterapia that hospitals are currently able to bridge this gap. This is only considering the basic consoles or tablets that children usually interact with. To be able to fund advanced technologies such as VR headsets becomes another financial barrier that health providers face.

Overall, all health providers believe that facilitating access to digital games is important to contribute to the psychological well-being of the patient during their treatment. Samantha shared the importance of foundations in ensuring that "children who benefit from it have access" to these tools.

4.4.3 Need for personalisation

The one-size-fits-all approach they currently use to satisfy patients' needs for entertainment and distraction was criticised by six health providers. Doctors emphasised that new adaptations and innovations are necessary to meet the individual needs of their patients undergoing cancer treatment. Age was an important factor that prevailed across interviewees. Mar, Samantha and Martina argued that video games should be adapted to the patient's age, their physical capabilities and their cognitive state instead of just being integrated as a generic

tool. Martina, a hemato-oncologist, confirms, “It’s evident that a child has to play video games that are adapted to their age”. This suggests that games must be appropriate for effective engagement and enjoyment of the patient. Sara shares this opinion as she believes that “games should be adapted to their age of development”. This is to avoid any negative outcomes or wrongful exposures to specific games.

The physical aspect also lacks personalisation. Currently, the implementation of video games does not specifically cater to patients with reduced mobility or cognitive conditions, which are often impacted due to treatment. Both Mar and Samantha stress how important it is for the integration to adapt to “reduced mobility” or other physical limitations. This is because certain games can be frustrating for children with motor problems or tremors. Mar suggested that games that are controlled “with a single button” or, as Samantha also states, “by voice”, could be better alternatives to prevent frustration and ensure it is accessible for everyone. On the other hand, for children who experience brain fog, games that are specialised for “brain training” are of high value. They have the potential to improve neurocognitive functions such as attention, memory and executive functions.

5. Conclusion

This study set out to answer the following research question: *How do health providers perceive the use of digital games by pediatric cancer patients during different phases of treatment?* The findings show that health professionals perceive digital games as more than recreational, momentary distractions. They are actually viewed as tools for emotional self-regulation, therapeutic distraction, and psychological resilience across the treatment journey. Furthermore, their value is not tied to one specific treatment phase, but to the pediatric cancer patient's emotional and physical state, which professionals use to evaluate the therapeutic need.

The first theme showed that digital games provide emotional relief. Health professionals described games as tools that help children self-regulate, distract themselves from stress, and manage their emotions. This benefit was not limited to the patients. In some cases, parents and other family members were also positively impacted. Digital games created a lighter atmosphere in hospital rooms and provided moments of shared enjoyment. In return, this made it easier for patients to cooperate and face procedures with a better attitude. These findings support the idea that emotional well-being is linked to the treatment process. As Maslow's theory suggests, emotional stability is a basic psychological need (Mathes, 1981, p. 69). Digital games fulfilled that need by providing safety, comfort, and consistency in otherwise unpredictable environments. This theme also echoes Puig's view that emotional support in pediatric oncology should come not only from therapy but also from everyday experiences like play. Professionals described digital games as therapeutic tools that children turn to when experiencing distress, anxiety, or sadness. These games help patients calm down, distract themselves during invasive procedures, and maintain emotional stability in an unpredictable environment. This benefit also extended to the child's surroundings. Parents and siblings were often emotionally affected by the improvement in the patient's mood, which contributed to a more harmonious hospital setting. These findings confirm Maslow's idea that emotional security is a foundational need, especially in clinical spaces where comfort is limited. Digital games fulfilled this need by creating moments of joy, reconnection, and self-expression. In this way, they align with Burghardt's definition of play as a necessary outlet for emotional release during stressful experiences (Burghardt, 2012, p. 17).

The second theme explored how digital games shape the patient's treatment journey. Health providers explained that children use games not according to strict medical phases, but based on their personal circumstances and situations. Therefore, digital games help structure time, motivate physical movement, and allow children to regain a sense of agency in moments where control is often taken from them. They were seen as instruments to battle solitude and regain physical strength. It also contributes to establishing a routine, or connecting with normality as patients knew it before their diagnosis, helping them stay more grounded. Approaching the integration of digital games through this angle demonstrated how multifunctional this tool can be if used correctly. It goes beyond the curing of the illness but rather takes it towards the healing and rehabilitation of the patient's body and mind to facilitate their integration into their normal life before illness.

The third theme revealed how digital games help create moments of connection and belonging. Across multiple interviews, as mentioned in the results, health providers saw games as emotional bridges between pediatric cancer patients and their close circles. They helped strengthen parent-child bonds, encourage friendships among patients, and create shared spaces of communication between children and professionals. These moments were presented as necessary to maintain the social and emotional development of patients, especially during long periods of hospitalisation. As Yogman et al. (2018, p. 7) suggest, play is essential to how children engage with the world and with others. This study extends that idea by showing how digital play continues to offer those social benefits even in clinical, hostile settings. Maslow's framework also supports this finding, where the need for connection and identity remains constant regardless of health conditions. Health providers described digital games as ways to restore those disrupted relationships and keep children emotionally connected to their surroundings.

The final theme addressed the limitations and concerns that arise with the current implementation of digital games. The professionals expressed concerns around screen time, unequal access to digital resources, and the lack of personalisation for different patient needs. It is essential to mention, however, that this did not overshadow all the advantages and psychological benefits of the tool. Nevertheless, health providers explained the risks of overuse and dependency. They suggested that parents should regulate the consumption and combine digital games with other forms of stimulation within the capabilities of the patient. Adding to that, a surprising and concerning topic was the lack of resources and funding

towards the implementation of digital games in clinical settings. Not all hospitals have equal access to tablets or consoles, and for some, these are seen as a "privilege". Also, this is not an exclusive issue to all public hospitals. For instance, health providers working at La Paz expressed how well integrated and funded their hospital was, whereas Hospital 12 de Octubre barely had it as an option. This raised a very important issue about increasing accessibility for patients and hospitals to digital games and the need for further funding and acknowledgement of this beneficial tool. Finally, many interviewees mentioned that games should be adapted to the child's age, physical ability, and cognitive condition. This final theme demonstrates that while digital games hold great potential, their implementation must be thoughtful, inclusive, and responsive to the individual patient.

My findings align with Maslow's Hierarchy of Needs as it helps explain why emotional safety, connection, and autonomy are so important to children undergoing treatment. In addition, UGT helps understand how and why children turn to digital media when they need to process fear, rebuild structure, or find moments of meaning. These theories worked together to explain the emotional, social, and psychological benefits that digital games offer to patients in pediatric oncology. To conclude, this thesis adds a new layer to the existing literature by giving voice to the health providers who see these benefits every day. Their insights show that digital play is clinically relevant and should be approached with the same depth as other non-invasive therapeutic tools. Properly integrated and used, it can help children feel more at ease, more connected, and more involved in their own treatment.

5.1 Theoretical Implications

This study contributes to theoretical discussions on digital play and emotional well-being by offering new insights into how health providers perceive the therapeutic value of digital games in pediatric oncology. Instead of just applying Maslow's Hierarchy of Needs and the Uses and Gratifications Theory (UGT), my findings contribute to these frameworks by grounding them in clinical practice and medicalised settings.

First, the findings enrich Maslow's Hierarchy of Needs (Mathes, 1981, p. 69) by showing how digital games help meet essential psychological needs during treatment. Professionals described video games as more than entertainment. They were seen as tools for re-establishing safety, emotional balance, and autonomy. This supports Maslow's idea that

unfulfilled psychological needs negatively impact overall well-being. My study also builds on the work by Yogman et al. (2018) and Burghardt (2012), who highlight the emotional value of play, as my findings demonstrate how digital play specifically supports children during fear, isolation, and pain by giving them agency in settings where control is often lost.

Health providers noted that children turned to games for distraction, emotional release, or connection, echoing the logic of UGT. Unlike structured therapeutic interventions, patients initiated interaction with digital games of their own will. This aligns with Puig et al. (2020), who noted how games help children regulate emotion and engage with treatment on their own terms.

Additionally, the study challenges negative narratives in media effects literature. There are concerns about dependency or overuse, yet professionals in this study trusted children to self-regulate their digital play with parental guidance. They observed that gaming was used purposefully and flexibly, depending on the child's emotional state. This supports earlier findings by Godino-Iáñez et al. (2020, p.14) on approaching certain aspects of the treatment in a non-threatening way but extends the argument into the digital domain, emphasising that play can reduce anxiety, build focus, and create emotional safety.

5.2 Societal Implications

The results of this study are useful to better understand how emotional well-being can be supported through non-invasive methods in pediatric cancer care. Firstly, they show that digital games are not simply for entertainment or distraction, but therapeutic tools recognised by professionals as valuable during treatment. This insight can inform how emotional support is structured within pediatric hospitals, especially when addressing the psychological burden of long-term illness such as pediatric cancer.

The results can be used to support children by creating hospital environments that acknowledge and prioritise the role of play in maintaining emotional balance. Health providers describe digital play as a form of stability that can reduce stress, increase cooperation and improve communication between patients and their circle. This has a wider impact not only on the child's mood and behaviour, but also on the overall atmosphere during treatment. Considering the impact a patient's mood can have on the rest of the people

involved is key to improving the approach to procedures and the treatment journey in general. These small improvements ultimately contribute to the overall psychological well-being of pediatric cancer patients and a better quality of life during hospitalisation.

The findings can also be used by public health organisations and foundations to design care strategies that prioritise psychological well-being alongside physical treatment. In a context where access to child psychologists may be limited, digital games offer an accessible, low-cost complement to therapy. This is especially relevant in hospitals where long wait times or resource shortages affect emotional care. Initiatives such as Juegaterapia in Spain already recognise the value of digital play, and this study provides further evidence to reinforce the expansion of such foundations. This research encourages policymakers and institutions to invest more space, time, and funding in these tools in everyday care.

5.3 Limitations and Future Research

This study is not without limitations. It focuses on a small, purposive sample of health providers from three hospitals in Madrid: one private and two public. They all collaborate with a foundation that supports digital play in cancer treatment. While this ensured insight-rich data, the findings are context-specific and not representative of broader institutional experiences, particularly in settings without similar infrastructure, funding or partnerships. In addition, the study did not explore the impact of specific types of games or mechanics, which could influence therapeutic effectiveness across ages or treatment contexts. It could be interesting to investigate if certain digital games or mechanisms are more successful as non-invasive therapeutic treatments than others, or if preferences influence the extent to which one is more beneficial than another.

Future research should prioritise age-specific analysis. Three health providers mentioned that younger children and adolescents engage with digital games in fundamentally different ways. One is symbolic play for pure distraction, the other is withdrawal or social connection. This opens a path for future comparative research that explores the emotional function of play across developmental stages. Furthermore, long-term research might determine if consistent use of digital play tools results in demonstrable psychological or clinical gains, notably in emotional regulation, anxiety reduction, and treatment adherence.

Finally, future studies should explore institutional and policy barriers to implementing digital play consistently. If the therapeutic value is recognised by professionals, then the structural gaps, such as lack of funding, training, or prioritisation, should be the next focus. This includes exploring whether digital play can and should be standardised in public healthcare systems as part of psychological care protocols or part of non-invasive treatments.

In conclusion, this study demonstrates that digital games are not secondary. They are emotionally strategic, professionally validated, and patient-centred tools. Their usage is intuitive, grounded, and in line with therapeutic objectives. They support more than substitute emotional care in paediatric oncology.

References

Abdelkhalik, M., Ibrahim, M., Maaz, F. A., & Boutros, E. (2024). Integrating child life specialists in pediatric oncology and hematology care: A narrative review. The *Journal of Pediatric Academy*. https://doi.org/10.4274/jpea.2024.309

Adeoye‐Olatunde, O. A., & Olenik, N. L. (2021). Research and scholarly methods: Semi‐structured interviews. *JACCP: Journal of the American College of Clinical Pharmacy, 4*(10), 1358–1367. https://doi.org/10.1002/jac5.1441

Alotaibi, M. S. (2024). Game-based learning in early childhood education: A systematic review and meta-analysis. *Frontiers in Psychology, 15,* Article 1307881. https://doi.org/10.3389/fpsyg.2024.1307881

Barrett, P. M., Mullen, L., & McCarthy, T. (2020). Enduring psychological impact of childhood cancer on survivors and their families in Ireland: A national qualitative study. *European Journal of Cancer Care, 29*(5), Article e13257. https://doi.org/10.1111/ecc.13257

Bashkin, O., Asna, N., Amoyal, M., & Dopelt, K. (2023). The role of nurses in the quality of cancer care management: Perceptions of cancer survivors and oncology teams. *Seminars in Oncology Nursing*, *39*(4), 151423. https://doi.org/10.1016/j.soncn.2023.151423

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Bruggers, C. (2018, April 9). Could video games help kids recover from cancer? *University of Utah Health.* https://uofuhealth.utah.edu/newsroom/news/2018/04/game

Burghardt, G. M. (2012). Defining and recognizing play. In P. Nathan & A. D. Pellegrini (Eds.), The Oxford handbook of the development of play. *Oxford University Press.* https://doi.org/10.1093/oxfordhb/9780195393002.013.0002

Datta, S. S., Saha, T., Ojha, A., Das, A., Daruvala, R., Reghu, K. S., & Achari, R. (2019). What do you need to learn in paediatric psycho-oncology? *Ecancer, 13,* Article 916. https://doi.org/10.3332/ecancer.2019.916

De la Hera, T., & Sanz, C. S. (2021). The role of spontaneous digital play during young patients' cancer treatment. *Media and Communication, 9*(1), 39–48. https://doi.org/10.17645/mac.v9i1.3216

De Lima, K. Y. N., & Santos, V. E. P. (2015). Play as a care strategy for children with cancer. *Revista Gaúcha de Enfermagem, 36*(2), 76–81. https://doi.org/10.1590/1983-1447.2015.02.51514

Fekete, A., & Fekete, Z. (2012). The psychologist's role in oncology. *Journal of Radiotherapy & Medical Oncology, 18*(1), 27–29.

Flick, U. (2007). Designing qualitative research. *SAGE Publications*.

Garwood, G., PhD & Tulane University. (1982). Piaget and play: translating theory into practice. In *Topics in Early Childhood Special Education* (Vols. 2–3, pp. 01–13). https://doi.org/10.1177/027112148200200305

Juegaterapia. (2024, October 17). Juegaterapia: Get to know us. https://www.juegaterapia.org/en/get-to-know-us/foundation/

Godino-Iáñez, M. J., Martos-Cabrera, M. B., Suleiman-Martos, N., Gómez-Urquiza, J. L., Vargas-Román, K., Membrive-Jiménez, M. J., & Albendín-García, L. (2020). Play therapy as an intervention in hospitalized children: A systematic review. *Healthcare, 8*(3), 239. https://doi.org/10.3390/healthcare8030239

Haiat, H., Bar-Mor, G., & Shochat, M. (2003). The world of the child: A world of play even in the hospital. *Journal of Pediatric Nursing*, 18(3), 209–214. https://doi.org/10.1053/jpdn.2003.28

Hargraves, V. (2019). What is digital play? *The Education Hub.* https://theeducationhub.org.nz/wp-content/uploads/2022/02/What-is-digital-play.pdf

Hewes, J. (2014). Seeking balance in motion: The role of spontaneous free play in promoting social and emotional health in early childhood care and education. *Children, 1*(3), 280–301. https://doi.org/10.3390/children1030280

HopeLab. (n.d.). *HopeLab Re-Mission*. https://hopelab.org/history

Huizinga, J. (1938). Homo Ludens: A study of the play-element in culture. Alianza Editorial/Emecé Editores.

Hüzmeli, H., Semerci, R., & Kebudi, R. (2024). The effect of therapeutic play on fear, anxiety, and satisfaction levels of pediatric oncology patients receiving chemotherapy. *Journal of Pediatric Nursing*, 77, e195–e201. https://doi.org/10.1016/j.pedn.2024.04.029

Ibrahim, H. A., Arbianingsih, N., Amal, A. A., & Huriati, N. (2020). The effectiveness of play therapy in hospitalized children with cancer: Systematic review. *Journal of Nursing Practice*, 3(2), 233–243. https://doi.org/10.30994/jnp.v3i2.92

Mathes, E. W. (1981). Maslow's hierarchy of needs as a guide for living. *Journal of Humanistic Psychology*, 21(4), 69–72. https://doi.org/10.1177/002216788102100406

Nijhof, S. L., Vinkers, C. H., Van Geelen, S. M., Duijff, S. N., Achterberg, E. M., Van Der Net, J., ... Lesscher, H. M. (2018). Healthy play, better coping: The importance of play for the development of children in health and disease. *Neuroscience & Biobehavioral Reviews, 95*, 421–429. https://doi.org/10.1016/j.neubiorev.2018.09.024

Puig, M. A., Alonso-Prieto, M., Miró, J., Torres-Luna, R., De Sabando, D. P. L., & Reinoso-Barbero, F. (2020). The association between pain relief using video games and an increase in vagal tone in children with cancer: Analytic observational study with a quasi-experimental pre/posttest methodology. *Journal of Medical Internet Research, 22*(3), e16013. https://doi.org/10.2196/16013

Ruggiero, T. E. (2000). Uses and gratifications theory in the 21st century. M*ass Communication & Society, 3*(1), 3–37. https://doi.org/10.1207/s15327825mcs0301_02

Sajjad, S., Gul, R. B., Sayani, S., Fadoo, Z., Abbasi, A. N., & Barolia, R. (2024). Development and testing of a videogame intervention for symptom management among 8–18 years old children with cancer: A study protocol. *BMJ Paediatrics Open, 8*(1), e002679. https://doi.org/10.1136/bmjpo-2024-002679

Silverman, D. (2011). Interpreting qualitative data (4th ed.). *SAGE Publications.*

Syrjala, K. L., Jensen, M. P., Mendoza, M. E., Yi, J. C., Fisher, H. M., & Keefe, F. J. (2014). Psychological and behavioral approaches to cancer pain management. *Journal of Clinical Oncology*, 32(16), 1703–1711. https://doi.org/10.1200/JCO.2013.54.4825

Thomas, B. (2024, September 27). More than physical: The impacts of childhood cancers on mental health. *Pediatric Cancer Research Foundation.* https://pcrf-kids.org/2024/09/27/more-than-physical-the-impacts-of-childhood-cancers-on-mental-health/

Volberding, P. A., Mason Spicer, C., Cartaxo, T., & Aiuppa, L. (2021). Childhood cancer and functional impacts across the care continuum. In A consensus study report. *The National Academies Press*. https://doi.org/10.17226/25944

Von der Heiden, J. M., Braun, B., Müller, K. W., & Egloff, B. (2019). The association between video gaming and psychological functioning. *Frontiers in Psychology, 10*, Article 1731. https://doi.org/10.3389/fpsyg.2019.01731

Von Soest, C. (2022). Why do we speak to experts? Reviving the strength of the expert interview method. *Perspectives on Politics, 21*(1), 277–287. https://doi.org/10.1017/S1537592722001116

Wakefield, C. E., McLoone, J., Goodenough, B., Lenthen, K., Cairns, D. R., & Cohn, R. J. (2009). The psychosocial impact of completing childhood cancer treatment: A systematic review of the literature. *Journal of Pediatric Psychology*, 35(3), 262–274. https://doi.org/10.1093/jpepsy/jsp056

Yogman, M., Garner, A., Hutchinson, J., Hirsh-Pasek, K., Golinkoff, R. M., Baum, R., ... Smith, J. (2018). The power of play: A pediatric role in enhancing

development in young children. *Pediatrics, 142*(3), e20182058. https://doi.org/10.1542/peds.2018-2058

Appendix A

Rompehielos y preguntas iniciales:

- ¿Cuánto tiempo has trabajado como (rol de entrevistado) en oncología?
- ¿Cuánto tiempo has estado trabajando en (Insertar hospital)?
- ¿Qué tan familiarizado estás con la integración de los videojuegos en el tratamiento del cáncer pediátrico?

Sección 1: Opiniones generales sobre los videojuegos en el cuidado del cáncer pediátrico

- Desde tu experiencia, ¿qué papel juegan los videojuegos en la vida diaria de los pacientes pediátricos con cáncer durante el tratamiento?
- ¿Qué beneficios emocionales y psicológicos crees que tiene el uso de videojuegos para los niños que están recibiendo quimioterapia?
- Teniendo en cuenta tu experiencia profesional, ¿cómo comparas los videojuegos con otras actividades recreativas para los pacientes pediátricos con cáncer en términos de bienestar psicológico y/o físico?

Sección 2: Fases del tratamiento del cáncer y el uso de videojuegos

- En tu experiencia, ¿en qué fases del tratamiento del cáncer los pacientes se benefician más de interactuar con los videojuegos en términos de bienestar psicológico y por qué?
- ¿Puedes describir cómo el uso de videojuegos ayuda a los niños a sobrellevar estas fases específicas del tratamiento?
- ¿Existen videojuegos o tipos de juegos que hayas encontrado más beneficiosos para los niños en diferentes etapas?
  ¿Cómo cambia el papel de los videojuegos a medida que los niños avanzan en su tratamiento, desde el diagnóstico hasta la remisión? ¿Hay diferencias notables?

Sección 3: Impacto psicológico de los videojuegos en los pacientes pediátricos con cáncer

- ¿Qué desafíos psicológicos enfrentan comúnmente los pacientes pediátricos con cáncer durante el tratamiento y cómo ayudan los videojuegos a abordar esos desafíos?
- ¿Cómo impacta el uso de videojuegos en el estado emocional de los pacientes, como en la reducción de la ansiedad, tristeza o frustración?
- ¿Has observado beneficios psicológicos a largo plazo del uso de videojuegos en tus pacientes, como una mejor regulación emocional o conexión social?
- ¿Qué comentarios, si los hay, has recibido de los pacientes o sus familias sobre cómo los videojuegos han afectado su estado de ánimo o su sentido de conexión con el mundo exterior?

Sección 4: Desafíos y limitaciones

- ¿Cuál sería tu consejo profesional para prevenir problemas conocidos relacionados con relaciones poco saludables con los videojuegos, como la adicción a los videojuegos o hábitos de juego poco saludables durante el tratamiento?
- ¿Has encontrado desafíos cuando alguno de tus pacientes ha interactuado con videojuegos durante el tratamiento?

Desde tu experiencia profesional, ¿sería importante facilitar el acceso a videojuegos para los niños que están lidiando con el tratamiento contra el cáncer? ¿Por qué?
- ¿Cuáles son las preocupaciones acerca del uso a largo plazo de los videojuegos, especialmente en niños con condiciones de salud?

Sección 5: El futuro de los videojuegos en oncología pediátrica

- En tu opinión, ¿cuál es el futuro de los videojuegos en el cuidado de la oncología pediátrica? ¿Ves alguna innovación o nuevo desarrollo en este campo?
- ¿Qué mejoras o adiciones sugerirías para mejorar el papel de los videojuegos en el apoyo a los pacientes pediátricos con cáncer durante el tratamientos
- ¿Qué nuevas tendencias en el juego digital o en el desarrollo de videojuegos podrían mejorar el bienestar de los pacientes con cáncer en el futuro?

Sección 6: Reflexiones finales

- ¿Hay algo más que consideres importante mencionar sobre el uso de videojuegos en el cuidado del cáncer pediátrico que no hayamos cubierto aún?
- ¿Cómo crees que los hallazgos de este estudio podrían ayudar a mejorar el cuidado psicológico de los pacientes pediátricos con cáncer en el futuro?

Appendix B

THEME	SUBTHEME	EXAMPLE CODES
Emotional relief from a health provider's lens	Coping mechanisms for emotional distress	['Apoyo emocional', 'Regulación emocional', 'Estabilidad Emotional ']
	Improvements in mood and anxiety	['Mejora del ánimo', 'Reducción de ansiedad', 'Cambio de actitud']
	Distraction from pain and hospital routines	['Distracción hospitalaria', 'Distracción del dolor', 'Escapismo']
Games as tools to shape their treatment journey	Restoring Agency in Moments of Powerlessness	['Hospital isolation', 'Tiempo muerto', 'Entertainment during isolation']
	Tools to Structure Time	['Adaptabilidad de juegos', 'Flexibilidad de uso', 'Integración personalizada']
	Tools for movement and motor coordination	['Adaptabilidad de juegos', 'Flexibilidad de uso', 'Integración personalizada']

Games as a Medium for Connection and Shared Belonging	Digital Games as a Bridge Between Children and Parents	['Play together', 'Hospital gaming groups', Gaming as communication]
	Creating Belonging Among Peers Through Play	['Contact with friends', 'Online multiplayer', 'Peer interaction]
	Digital Games as Mediators in Doctor-Patient Relationships	['Cooperation', 'Communication', 'Procedures', 'understanding', 'Attitude']
Practical Concerns: Addiction, Adaptability and Access	Screen Time and Dependency	['Addiction', 'Dependency', 'Financial aid', 'Lack of resources', 'Demonisation of digital play']
	Digital Divide and Unequal Access to Resources	['Lack of resources', 'Lack of funding',]
	Need for personalisation	['Adaptability', 'Mobility', 'Special Needs']

Appendix C

Pseudonym	Role	Institution	Years of Experience in Pediatric Oncology
Eliana	Psychologist	Fundación Juegaterapia & Hospital 12 de Octubre	9-10 years
Oscar	Pediatric Oncologist & Researcher	Hospital La Paz	4 years (plus 1 year during residency)
Laura	Child Life Specialist and Psycho-oncologist	Hospital La Paz	20 years (4 years at current hospital)
Mar	Nurse	Hospital Quirón Salud Madrid	8 years (5 in current position)
Samantha	Psychologist	Hospital Quirón Salud Madrid	8–9 years (1 year at Quirón)
Juan	Pediatric Oncologist	Hospital 12 de Octubre	30 years
Martina	Hemato-oncologist	Hospital Quirón Salud Madrid	18 years (9 years at current hospital)