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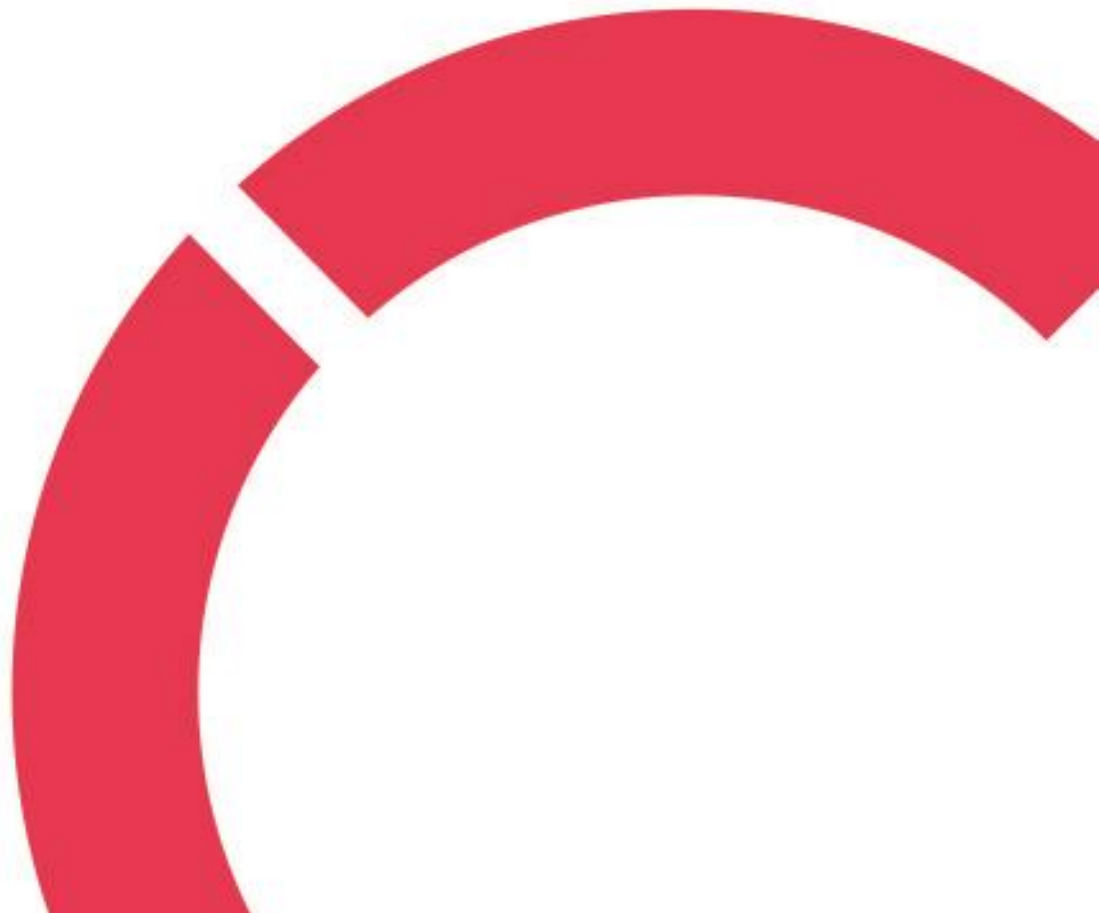
DIGITAL MENTAL HEALTH INTERVENTIONS FOR ADOLESCENTS

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ABSTRACT

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<p>It is important to develop proper digital mental health interventions that can curb the raging mental health issues among adolescents. The rise in the use of digital technology in the health sector has provided faster and more convenient ways of reaching the patient, especially concerning mental health matters. The study aims to describe how digital technologies can promote adolescent mental health. It aims to clarify the use of digital technologies to provide practical solutions to nursing mental health care. The focus is to review the existing literature on digital mental health interventions for adolescents. With young people being exposed to various digital platforms, it is effective to find ways to get access to mental health care through digital means. The paper also aims to discuss how digital interventions have been used and how effective they have been in promoting mental health among adolescents. In such consideration, evaluating the potential changes that can be inspired by the growth of mental health interventions through the involvement of digital platforms is immense. The harnessing of such digital strengths, such as social media and other e-health options, can bring about particular changes within the scope of digital mental health that can be useful.</p> <p>The thesis was conducted with a literature review approach. The databases chosen included SAGE and PubMed. In the end, five articles from the past ten years were selected according to purposeful sampling. Data was analyzed with a thematic analysis method and findings are presented as narrative summary.</p> <p>The research found that digital interventions for adolescents were utilized through various platforms, leveraging interactive tools such as mobile applications and online forums. The effectiveness of these interventions was notably dependent on internet access, with four specific interventions identified as particularly successful in delivering mental health support. The positive impact was facilitated by caregivers and peers creating engaging and mentally healthy content, fostering a supportive environment for adolescents to share and benefit from digital mental health interventions.</p>		

<p>Keywords Mental Health, Digital Interventions, Adolescents</p>
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List of Abbreviations

WHO – World Health Organization

ACOG – American College of Obstetricians and Gynecologists

GAD – Generalized Anxiety Disorder

OCD – Obsessive Compulsive Disorder

PTSD – Post-Traumatic Stress Disorder

COVID-19 – Corona Virus Disease 2019

CBT – Cognitive Behavioral Therapy

ICBT – Internet-delivered Cognitive Behavioral Therapy

MRI – Magnetic Resonance Imaging

ADHD – Attention Deficit/Hyperactivity Disorder

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1 INTRODUCTION

Significant changes in mental health occurring among young people could be due to the active use of digital devices such as mobile phones and computers. However, the increase in the use of digital media and digital content may assist in providing remedies to psychopathological issues facing adolescents. Social media, gaming, and other forms of digital communication contribute to about 50% of leisure activities (“CORDIS | European Commission,” 2022). This draws the children further away from social games and leisure activities, affecting their mental health.

The research will purpose to find the most viable digital mental health interventions that could assist in curbing the mental health menace among adolescents. The withdrawal of children from social activities by digital devices prompts the research study to find methods to assist in curbing adolescent mental health issues. The nursing procedure to be digitally implemented should assist those affected by digitally induced mental health issues.

With improvements in digital health technology, nurses may find it easy to treat particular diseases among adolescents. These digital technologies can assist in diagnosing and treating mental health disorders early; hence, nurses need to pay critical attention. However, nurses may attain a particular level of assistance to patients with elevated cases. However, the applicability of these interventions needs to ensure that these children are not exposed to these harmful technologies. The problem arises when we are supposed to administer treatment and follow-up simultaneously. This means that nurses are anticipated to strengthen their support to parents and children by outlining the benefits of the treatment and the interventions suggested.

The study aims to develop digital mental health interventions that will assist adolescents early in curbing the rising mental health issues. These interventions are intended to use any form of digital media that adolescents use in their daily lives. These interventions will assist in the early diagnosis of any disorders and the treatment of the same. The thesis aims to use our knowledge of nursing science to diagnose and treat mental health issues among adolescents digitally.

2 THEORETICAL FRAMEWORK

This section will define and explain the theories and concepts used in this investigation. Nursing knowledge and skills will also be taken into consideration. It is a comprehensive strategy that nurses will use as a manual to help promote proper digital mental health for adolescents.

2.1 Prevalence of Mental Health Issues Among Adolescents

One in six persons is between the ages of 10 and 19, the adolescent age. Unique and informative are the words used to describe adolescence. Adolescents are more susceptible to mental health issues due to physical, emotional, and social changes, such as exposure to poverty, abuse, or violence. Adolescent health and well-being, both now and in the future, depend on several factors (WHO, 2021). These factors include preventing negative life experiences, enhancing social and emotional development, and accessing mental health services easily.

One in seven (14 percent) of the world's 10–19-year-olds suffer from mental health issues, although they are often overlooked and mistreated (WHO, 2021). Adolescents with mental health issues are particularly at risk of social exclusion, discrimination, stigma (which can affect their willingness to seek help), educational difficulties, risk-taking behaviours, physical health problems, and human rights violations. They face all these issues and more. Adolescence is a critical age in the growth and development of human beings. It forms a key and individual interaction in the mental development where the child may develop disorders. Major factors contributing to the development of disorders in adolescents include environmental and social factors. These factors can be traumatic experiences in the child's social activities, such as bullying.

The extent of mental health disorders has been recorded to affect adolescent development. Some of the consequences documented include academic difficulties and relationship problems. This is derived from an underpinning traumatic experience during the sufferer's early childhood development. As earlier stated, other consequences of the extent of mental health disorders include substance abuse and suicide. Therefore, caregivers and parents must consider various options for assisting affected adolescents. These options include recognizing various signs and symptoms of affected adolescents at home or school to enable faster administration of digital interventions.

To better understand the challenge, WHO provides certain behavioral changes that can be considered as the key behavioral changes to be considered as signs, and symptoms of mental health disorders. At first, the patient is considered to show persistent feelings of sadness and hopelessness. This will lead to the withdrawal from social activities, hence isolation. This disorder portrays changes in sleeping patterns, such as oversleeping or insomnia. Given the above changes, caregivers and parents should consider talking and communicating with their children to establish the cause for such behavior. Seeking professional help and establishing digital intervention methods provide a remedy for curbing the changes before they escalate.

The American College of Obstetricians and Gynecologists (ACOG) documented the common mental health disorders in adolescents as anxiety disorders. It is better to derive the source of the disorders among adolescents and their causes to establish digital interventions better. Anxiety disorders are generalized anxiety disorder (GAD), social anxiety disorder, and panic attacks. GAD manifests as excessive anxiety and worries over events or activities in the adolescent's life. This is caused by several activities, such as traumatic events in the course of life, such as a divorce or fear of being left alone. The intensity and duration of the anxiety and worry may vary depending on the likelihood of the anticipated event happening. The young person may struggle to control the worry, which may interfere with their current tasks. Social anxiety disorder is the persistent fear of one or more social situations. These social situations tend to cause extreme distress and avoidance of social settings, leading to isolation.

Other mental disorders in play include obsessive-compulsive disorder (OCD) and post-traumatic stress disorder (PTSD). OCD is characterized by the specific content of obsessions and compulsions where young individuals are obsessed with certain symptom dimensions. They include cleaning, symmetry, forbidden thoughts, and harm. PTSD, on the other hand, develops characteristic symptoms after exposure to actual or threatened death, serious injury, or sexual violence. This has been shown to manifest itself in adolescents where strict discipline or minimal parental support has been demanded. These risk factors may contribute to a rise in mental disorders among adolescents.

2.2 Digital Treatment for Adolescents

The rise in the use of technology in the modern world has prompted this research to find active ways of using technology to treat mental health issues among adolescents. Young people spend about 8 hours daily on their mobile devices. Finding better ways of achieving treatment methods from digital devices may be effective (Rost et al., 2020). Among the many forms of electronic media available to

today's youth are mobile phones, laptops, tablets, and the Internet. This is aside from software (such as video games and social networking sites) and content (such as music and movies). All these provide an avenue for children to learn and take up various forms of content that could assist in treating mental health issues.

The term "digital mental health" refers to the use of digital health technologies in diagnosing, supporting, preventing, and treating mental illness. Mobile health applications, wearables, consumer neurotechnologies, virtual reality systems, and internet platforms are all part of this cluster of technical innovations (Lattie et al., 2019). Digital mental health tools' primary users or patients are adolescents and the youth, who are early adopters of all things digital, including health care. Because of the rising incidence of mental illness and the growing need for telemedicine services, the COVID-19 pandemic has enhanced the need to utilize digital mental health solutions (Torous et al., 2019).

A rising body of research has focused on the potential benefits of implementing digital health techniques among adolescents, such as the World Health Organization. At the same time, people in this age bracket are particularly susceptible to manipulation, primarily through digital gadgets and methods. There are advantages and disadvantages to using digital technologies for adolescents' and children's mental health therapy. This raises various ethical considerations in mobile health intervention, especially mental health.

The lives of young people have been expanded beyond borders through the intervention of technology. Social media and mobile phones have enabled the faster development of social interventions that allow young people to communicate with each other around the globe. Harnessing this opportunity to include technology in assessing and delivering digital mental health interventions may provide critical attainments for young individuals with disorders. According to Frey (2018), the assessment of digital interventions provides critical changes to the full scale of digital mental health. Social media has often been an underutilized platform for delivering mental health interventions and services. This is because the platform has often been misused in providing context for escalating mental health disorders, especially among adolescents.

The challenges described by Frey in his convention provide that social media may sometimes provide a challenge in interpreting particular posts. These challenges may need to be addressed by a mental health professional, especially considering that the individuals are adolescents. In further discussion, a study conducted in 2020 by the Journal of Adolescent Health involving interviews with 20 gang-

related youth from a community-based organization provides insight into the extent of the use of social media in addressing mental health disorders. The interview results show that social media can be useful in providing mental health support for young people living in areas with high levels of exposed violence.

The research provides several recognizable attainable changes where social media can be employed to build relationships among young people. Meaningful relationships brought about by social conversations on social media may reduce the probability of violence and create a sense of freedom. The comprehensive study suggests the intervening nature of social media as the point of humanizing digital mental health. Social media, in this case, may provide a critical point of contribution in bringing young people from vulnerable communities together. These youth populations may require hands-on changes to their lifestyle when a mental health caregiver is assigned to each of their cases. Social media enables warm communication between the youth in a platform that allows more privacy.

2.3 Non-digital Treatments for Mental Health Disorders in Adolescents

There are various non-digital treatments for mental health disorders in adolescents. This provides alternatives to areas where no digital communication or applicability has been achieved. In such consideration, psychotherapy and counselling have been recorded to assist the adolescent with understanding and comprehension of their feelings and emotions. This is done through the intervention of a therapist or mental health nurse through talk therapy or family therapy. Cognitive behavioral therapy (CBT) forms the first instance of non-digital treatment. This form of treatment is widely used for a range of mental disorders. The mental health caregiver identifies and changes negative thoughts, patterns, and behavior. This form of treatment can be delivered to individuals or groups in consideration of the uniformity of their disorders. This form of therapy is commonly used in adolescents with anxiety and depression (Mychailyszyn et al., 2012). This approach assists in reducing suicide and loneliness through the stated recommendation after the procedure has been carried out.

Medication is also a treatment for various mental health disorders in adolescents. Medication is prescribed by mental healthcare professionals, such as antidepressants and antipsychotics, that assist in taming individuals from extremely hyper situations. This is coupled with mind-body techniques such as yoga, meditation, and mindfulness practices that help manage stress, improving mental health. Art therapy also represents a remedy for non-digital forms of interventions. This involves painting, drawing, and sculpting activities that facilitate self-expression. Therefore, creative attributes in the daily

activities of the adolescent are achieved that promote self-awareness and self-healing (Malchiodi, 2012). This therapy greatly benefits adolescents with trauma-related disorders, anxiety, and mood disorders.

Interpersonal therapy (IPT) also involves a time-limited form of therapy that addresses interpersonal issues and relationships. Usually, this is done to adolescents with poor communication and interpersonal skills in school or home settings. The communication of adolescents about their feelings may come out differently. This affects their ability to interact with peers, hence raising fights and school shootings. IPT is well known for treating depression in adolescents (Mufson et al., 2018). Mindful-based interventions incorporate various mindful practices. These practices involve the relaxation of the mind through meditation and breathing exercises. This is done to promote self-awareness and self-reduction to reduce hyperactivity in adolescents. This aside, these activities help in emotional regulation, where the adolescents are made to sit still, master their emotional states, and become aware of their stressors (Esmailian et al., 2018). These interventions are important for treating patients with severe PTSD, ADHD, and anxiety.

2.4 Role of the Nurse in Mental Health Promotion

The nurse is considered a diverse professional in the social and medical fields. In mental health nursing, the nurse's role is to assist patients in developing critical self-dependence in developing medical assistance that is workable for the patient (Smith, 2022). In this case, adolescent patient independence depends on how well the nurses in the field can formulate therapy sessions that can be highly applicable to remote users. Since the target population involves children and youth, the mode of delivery should be active enough to hold their concentration and assist in the delivery of treatment (Prospects, 2021). Also, the formal introduction of the nursing goal is to discover the various interventions available for young people to curb mental health issues.

Digital-based nursing interventions are conducted by assessing various physical, psychological, and cultural aspects to improve the goals of nursing care. In this case, the reduction of various cultural stresses and depression for affected adolescents during difficult times could be accredited to nurses. These notable cultural changes registered by nurses in the administration of various changes in digital interventions could assist in creating influential changes in the interventions. The digital-based mental health interventions include mobile-based interventions as well as web-based interventions. Nurses must provide sustainable changes to the selected interventions based on their assessment of the cultural

changes. The social aspects of the nursing profession require the development of applicable medical interventions, especially for mental health disorders.

Nurses also play a critical role in implementing and evaluating digital mental health interventions. Their avid follow-ups and thorough identification of patients with different disorders and how they respond to treatment may create critical points for better provision of digital mental health services. This aside, the nurse can also be anticipated to collect and analyze data on the effectiveness of digital mental health interventions. This comes from considering various outcomes that may require the interventions to be adjusted to suit its users. When social media has been the selected formation, the changes required in the organization of posts and video content must be adjusted depending on the reactions received online. This can be done by a mental health nurse, where suggestions on the right steps to take can be provided.

Based on the collected data, recommendations for nurses include formulating engaging and culturally sensitive therapy sessions tailored for adolescents leveraging digital-based interventions like mobile and web platforms. Nurses play a crucial role in assessing cultural changes, implementing interventions, and evaluating their effectiveness. As health promoters, nurses can actively contribute to mental health by adapting interventions in schools and vocational settings, ensuring tailored and effective support for adolescents.

3 PURPOSE, OBJECTIVES AND RESEARCH QUESTIONS

The purpose of the study is to describe how digital technologies can promote adolescent mental health. The objective of the study is to provide recommendations for developing and implementing effective digital mental health interventions for adolescents based on the literature review findings.

The research questions for the thesis are;

1. How have digital technologies been used in promoting adolescent's mental health?
2. What effects have digital technologies had on promoting mental health among adolescents?

4 METHODOLOGY

A literature review study is essential to the nursing field. It assists in the synthesis and review of various authors and their ideologies. This places the various topics that are relevant to the topic in context with the current research. Literature review guarantees evidence-based practice, which improves mental health nursing quality (Lai and Chan, 2010). This implies that the literature review provides evidence to the researcher, assisting in improving nursing health care through scientific reasoning. With the literature review approach selected, the possible research questions to guide the research would be: what are the current digital mental health interventions for young people in use? The answer to this question would provide the extent to which digital technologies have been used to treat mental disorders over time. This aside, the effectiveness of these technologies would imply that the study is relevant and seeks to contribute further to providing remote mental health services.

4.1 Literature review approach

A literature review approach is used to achieve the various research objectives and answer the research questions. It is the methodological approach. A literature review differs from other types of research in that it focuses solely on existing literature. It makes use of already published material to generate new information. A literature review can consist solely of a summary of the sources.

A literature review study is essential to the nursing field. It assists in the synthesis and review of various authors and their ideologies. This places the various topics that are relevant to the topic in context with the current research. Literature review guarantees evidence-based practice, which improves mental health nursing quality (Lai and Chan, 2010). This implies that the literature review provides evidence to the researcher, assisting in improving nursing health care through scientific reasoning. With the literature review approach selected, the possible research questions to guide the research would be: what are the current digital mental health interventions for young people in use? The answer to this question would provide the extent to which digital technologies have been used to treat mental disorders over time. This aside, the effectiveness of these technologies would imply that the study is relevant and seeks to contribute further to providing remote mental health services.

The barriers and facilitators in the digital mental health platform can also form a consideration in the literature study. In such highlights, the literature study will seek to adjust the perspective of digital

mental health's various facilitators and enablers. This will discover the various supporters of the changes in the digital interventions of mental health disorders among adolescents. In such delight, the changes considered can be optimized or reduced accordingly once they have been discovered to be helpful.

In this case, the aim is to review existing literature on digital mental health interventions for adolescents, including those available and in use. Their effectiveness in their use may also be highlighted based on their applicability in the field and the assistance achieved in its applicability.

In this case, identifying the key barriers to digital mental health interventions and the key facilitators, including issues such as usability, accessibility, and adaptability, will provide relevance to the study. Evaluating the potential of finding the most appropriate interventions for adolescent mental health disorders will provide compelling insight into unique issues. These issues include but are not related to stigma and confidentiality, where the patient data and their ability to share their experiences on social media or its alternatives will guarantee utmost privacy.

In this case, it is anticipated that from the literature review conducted, favourable recommendations can be drawn on the applicability of developing and implementing effective digital mental health interventions for adolescents. A proper research strategy needs to be developed from the mentioned research objectives to arrive at effective research. In this case, the strategy implies a step-by-step search of the needed articles. The search involves the identification of the key search terms related to the topic, such as 'digital mental health interventions,' 'adolescents,' 'mental health,' 'telehealth,' 'E-health' among others. Once this has been accomplished, it is important to find the databases in which the various articles will be found.

The primary objective of this research is to describe how digital technology promotes the mental health of adolescents. This narrative summary methodology outlines the approach employed to answer the research questions and contributes to the understanding of how digital interventions can enhance the well-being of adolescents.

4.2 Data Collection

Data in this thesis was collected as a literature review. This was done effectively with guidance from the research questions and objectives. Searches were conducted on two nursing literature platforms, SAGE and PubMed. Various keywords were used to aid the search, such as 'digital mental health,' 'digital mental health interventions,' and 'mental health nursing.' The time frame for the articles was

limited to 10 years, between 2012 and 2022. The focus was on the articles in full text and strictly written in English.

Further, evidence-based articles connected to evidence-based mental health nursing were also chosen for the literature review. The research design chosen was a qualitative literature review study with the justification of the research objectives and goals of finding the most appropriate articles providing information regarding digital mental health interventions for adolescents. The research focussed on articles from identified keywords while employing a search strategy.

Exclusion criteria were used to screen the articles selected from the above sources. The articles were selected because some cannot be reviewed in full text. This means that there would be limited knowledge of the subject matter, hence its exclusion. The SAGE database was screened using the applicable keywords, which yielded thousands of sources. However, too many articles focused on digital psychiatry, not digital mental health interventions. The data collection specified the age range, considering the research mainly focused on adolescents. Articles that had lower or higher age ranges in context were excluded. Since no direct or specified intervention was being studied, the articles including major interventions were selected for the research.

Once the relevant studies were found, it was important to review each source to find the required information supporting the objectives. The selection process employing the inclusive and exclusive criteria assisted in narrowing the search to arrive at the most viable sources. The data extraction criteria mainly focused on the study design and approaches selected by the relevant authors. The design approaches matched the design approach used in this study. The participants of the specific study and their ages also contributed to the selected source to be used. Other extraction factors included the intervention characteristics, the outcomes of the detailed research as well and their limitations. The data collection was conducted vigorously in search of relevant articles for the study.

Once the sources have been identified, it is important to focus on quality matters. This means the sources needed to be screened for their information quality and contribution to the study. Since the research was geared toward finding the best possible solutions for digital interventions, finding relevant articles reflecting this quality level was paramount.

I have used artificial intelligence for the data search in getting my research process.

4.3 Data analysis

Data analysis examines each chosen article using analytical and logical reasoning to evaluate data. An evaluation and summary of each article then compared these sentences and keywords to those of previously searched publications. Finally, the relevant information was integrated to produce the outcome. The research issue required fundamental data to study mental health intervention for adolescents (Popenoe et al., 2021). Analysing the collected data or information is essential. In this study, articles are summarised with the narrative approach. One must carefully study and compare each article chosen for this study (Table 1.).

Article	Title and Journal	Authors	Research method	Main Findings
1. Interventions for adolescent mental health: an overview of systematic reviews.	<i>Journal of Adolescent Health</i>	Das, J.K., Salam, R.A., Lassi, Z.S., Khan, M.N., Mahmood, W., Patel, V. and Bhutta, Z.A	Systematic Review	Systematically reviewed interventions for adolescent mental health, emphasizing the effectiveness of psychological approaches. Highlighted the need for continued innovation and exploration of interventions tailored to adolescents.
2. Annual Research Review: Digital health interventions for children and young people with mental health problems—a systematic and meta-review.	<i>Journal of Child Psychology and Psychiatry,</i>	Hollis, C., Falconer, C.J., Martin, J.L., Whittington, C., Stockton, S., Glazebrook, C. and Davies, E.B.,	Systematic Review and Meta-Analysis	Focused on evaluating the effectiveness of digital health interventions for children and young people. Emphasized positive impact on mental health outcomes with specific types of interventions.
3. Evidence on digital mental health interventions for adolescents and young people: a	<i>JMIR mental health,</i>	Lehtimaki, S., Martic, J., Wahl, B., Foster, K.T. and Schwalbe, N.	Systematic Overview	They conducted a systematic overview of digital mental health interventions for adolescents and

systematic overview. JMIR Mental Health				young people, emphasizing the effectiveness of interventions, including mobile and web-based platforms.
4. Digital mental health interventions for depression, anxiety, and enhancement of psychological well-being among college students: systematic review. Journal of Medical Internet Research	<i>Journal of medical Internet Research,</i>	Lattie, E.G., Adkins, E.C., Winquist, N., Stiles-Shields, C., Waford, Q.E. and Graham, A.K.	Systematic Review	Systematically reviewed digital mental health interventions targeting college students, highlighting the positive impact on depression, anxiety, and psychological well-being.
5. Engaging children and young people in digital mental health interventions: a systematic review of modes of delivery, facilitators, and barriers. Journal of Medical Internet Research	<i>Journal of medical Internet research</i>	Liverpool, S., Mota, C.P., Sales, C.M., Čuš, A., Carletto, S., Hancheva, C., Sousa, S., Cerón, S.C., Moreno-Peral, P., Pietrabissa, G. and Moltrecht, B.	Systematic Review	Systematically reviewed digital mental health interventions for children and young people, focusing on modes of delivery, facilitators, and barriers. Emphasized the importance of tailored interventions that engage effectively.

TABLE 1. Selected articles

4.4 Ethical Considerations

The narrative review approach employed in synthesizing evidence from the identified sources on digital mental health interventions for adolescents involves ethical considerations that are pivotal for ensuring the integrity, transparency, and applicability of the findings. This approach, while offering a comprehensive narrative synthesis, necessitates careful attention to ethical dimensions to uphold the well-being and privacy of the studied population.

First and foremost, the process of summarizing and interpreting findings from various sources demands a commitment to intellectual honesty and rigor. Ethical conduct in narrative review involves

diligently representing the perspectives and nuances of each source without distortion or bias. Authors must navigate the challenge of balancing comprehensiveness with conciseness, ensuring that the narrative accurately reflects the diversity of methodologies, populations, and interventions explored in the selected sources.

Respecting the autonomy and rights of the researchers behind the selected sources is imperative. Ethical considerations dictate the acknowledgment of their intellectual contributions and the avoidance of misrepresentation. Full and accurate citations are essential to credit the original researchers, fostering a scholarly environment that values collaboration and respects intellectual property.

In the context of digital mental health interventions, privacy and confidentiality emerge as critical ethical considerations. Given the sensitive nature of mental health information, authors employing a narrative review must be cautious in disclosing specific details about participants, interventions, or outcomes. Ensuring anonymity and de-identification of individuals and study locations in the narrative synthesis is paramount, aligning with ethical standards for handling sensitive health data.

Additionally, transparency in reporting potential conflicts of interest is vital. Authors should disclose any affiliations, funding sources, or personal interests that might influence the interpretation of the findings. This transparency fosters trust in the review process and enables readers to assess the objectivity of the narrative synthesis.

Moreover, ethical considerations extend to the potential impact of the review on policy, practice, and the well-being of adolescents. Authors should critically reflect on the implications of their synthesis, considering the potential consequences for individuals and communities. It is imperative to address the potential limitations and generalizability of the findings, promoting responsible and context-aware applications of the synthesized knowledge.

Ultimately, the ethical underpinning of the narrative review approach lies in the commitment to rigor, transparency, and the well-being of the studied population. By upholding these ethical principles, authors contribute to the trustworthiness and credibility of the narrative synthesis, fostering a foundation for informed decision-making in the realm of digital mental health interventions for adolescents.

5 FINDINGS

In this comprehensive overview by Das et al. (2016), the focus is on synthesizing existing systematic reviews to provide a holistic understanding of interventions for adolescent mental health. The study aims to distill key findings from a range of sources, shedding light on effective strategies and gaps in the current literature.

The researchers systematically review a variety of interventions, examining their impact on adolescent mental health. This includes psychological, pharmacological, and community-based interventions. By aggregating evidence from multiple systematic reviews, the study offers a nuanced perspective on the diverse approaches employed to address the complex landscape of adolescent mental health.

The findings highlight several noteworthy conclusions. First, the effectiveness of certain psychological interventions, such as cognitive-behavioral therapy, is underscored in promoting positive mental health outcomes among adolescents. Additionally, the overview emphasizes the importance of community-based interventions, recognizing the role of social support networks in contributing to overall well-being.

Furthermore, the study identifies gaps in current research, pointing towards areas where more comprehensive investigations are needed. This includes the need for further exploration of pharmacological interventions and the long-term effects of various strategies on adolescent mental health.

The overview provides valuable insights for practitioners, policymakers, and researchers involved in the development and implementation of adolescent mental health programs. By consolidating findings from systematic reviews, Das et al. contribute to the ongoing dialogue surrounding effective interventions, encouraging evidence-based approaches for promoting the mental health of adolescents.

This source serves as a foundational piece, offering a roadmap for understanding the existing landscape of interventions and guiding future research endeavors in the dynamic field of adolescent mental health.

Hollis et al. (2017) conducted a systematic meta-review in the *Journal of Child Psychology and Psychiatry*, aiming to comprehensively evaluate digital health interventions for children and young people with mental health problems. This research represents a pivotal exploration into the emerging field of digital mental health and its potential impact on the younger demographic.

The study delves into a wide array of digital interventions, ranging from mobile applications to online platforms, designed to address mental health concerns in children and young individuals. By systematically reviewing existing literature and conducting a meta-analysis, the researchers offer a nuanced understanding of the effectiveness of various digital interventions.

Key findings suggest that digital health interventions have the potential to be beneficial in managing mental health problems among children and young people. The meta-analysis reveals moderate effect sizes across diverse intervention types, indicating a positive impact on psychological well-being. Additionally, the researchers identify specific characteristics that contribute to the success of digital interventions, such as user engagement and interactive features.

However, the study also underscores the need for rigorous evaluation and further research to establish the long-term efficacy and safety of digital interventions in this population. The dynamic nature of technology and its rapid evolution pose challenges in maintaining the relevance and effectiveness of digital mental health tools.

This source serves as a valuable reference for understanding the current landscape of digital interventions for children and young people with mental health problems. The findings contribute to ongoing discussions regarding the integration of digital health solutions into mainstream mental health care, providing insights for clinicians, researchers, and policymakers. The research by Hollis et al. is pivotal in shaping the direction of future studies and the implementation of evidence-based digital interventions in paediatric mental health care.

Lehtimäki et al. (2021) present a systematic overview of JMIR Mental Health, focusing on accumulating evidence surrounding digital mental health interventions for adolescents and young people. This research critically evaluates a range of interventions, consolidating findings to offer a comprehensive understanding of the current state of digital mental health for this demographic.

The study employs a systematic approach to gather and analyze evidence from diverse sources, including randomized controlled trials, observational studies, and reviews. By synthesizing this information, the authors aim to provide insights into the effectiveness, feasibility, and overall impact of digital mental health interventions tailored to adolescents and young individuals.

Key findings highlight the growing body of evidence supporting the use of digital interventions in improving mental health outcomes. The systematic overview identifies specific types of interventions, such as mobile applications and online platforms, that have demonstrated positive effects in areas like anxiety, depression, and overall psychological well-being among adolescents.

Moreover, the research addresses the nuances of implementation, discussing factors that contribute to the success or challenges of digital mental health interventions in this population. Considerations regarding user engagement, accessibility, and cultural relevance emerge as crucial elements for the effectiveness of these interventions.

The study by Lehtimaki et al. contributes to the evidence base for digital mental health interventions, offering valuable insights for practitioners, researchers, and policymakers. It informs the ongoing discourse on the integration of technology into mental health care for adolescents and young people. The systematic overview not only highlights the promising outcomes but also underscores the need for continued research and refinement of digital interventions to ensure their sustained impact on the mental health of this demographic.

Liverpool et al. (2020) present a systematic review in the *Journal of Medical Internet Research*, aiming to explore the engagement of children and young people in digital mental health interventions. The study investigates various modes of delivery, identifies facilitators, and examines barriers to engagement in order to provide a comprehensive understanding of effective strategies and challenges.

The research systematically reviews a range of digital mental health interventions designed for children and young individuals. By focusing on the modes of delivery, the study addresses the diversity of platforms and approaches used in these interventions, ranging from mobile applications to online programs.

Key findings highlight the importance of tailoring interventions to the preferences and needs of children and young people. The systematic review identifies facilitators of engagement, such as user-friendly interfaces, interactive features, and age-appropriate content. Additionally, the research sheds light on barriers to engagement, including privacy concerns, technical challenges, and the need for parental involvement.

The study emphasizes the dynamic nature of engaging children and young people in digital mental health interventions and underscores the significance of ongoing adaptation and innovation. Insights from this review provide valuable guidance for developers, practitioners, and policymakers seeking to enhance the effectiveness of digital interventions for this demographic.

This source contributes to the literature by offering a nuanced exploration of the factors influencing engagement in digital mental health interventions among children and young people. The findings from Liverpool et al. (2020) inform future developments in this rapidly evolving field, aiming to create

interventions that are not only effective but also resonate with the unique needs and preferences of the younger demographic.

6 DISCUSSION

The increasing prevalence of mental health issues among adolescents necessitates innovative and accessible interventions. This discussion synthesizes insights from five key sources, each contributing valuable perspectives to the overarching objective of understanding and promoting digital mental health interventions for adolescents. The research questions guiding this discussion are:

1. How have digital technologies been used in promoting adolescents' mental health?
2. What effects have digital technologies had on promoting mental health among adolescents?

6.1 Overview of Sources

Das et al.'s overview provides a foundational understanding of various interventions, emphasizing psychological, pharmacological, and community-based approaches. While not exclusively focused on digital interventions, it highlights the importance of a multifaceted strategy. This underscores the need to integrate digital technologies into a broader spectrum of interventions to address the diverse needs of adolescents comprehensively. Hollis et al.'s meta-review hones in on the impact of digital interventions specifically for children and young people. The findings underscore the potential benefits of digital solutions, with moderate effect sizes indicating positive outcomes. This source highlights the relevance of considering age-specific factors in designing and implementing digital interventions for adolescents.

Lehtimaki et al.'s systematic overview provides a current synthesis of evidence, offering insights into the effectiveness and feasibility of digital mental health interventions for adolescents. The study addresses both the positive impact and the challenges associated with these interventions, contributing to a nuanced understanding of their role in promoting adolescent mental health. Lattie et al.'s systematic review zooms in on the college demographic, shedding light on how digital interventions can alleviate depression and anxiety among students. This source emphasizes the need for tailored solutions within specific contexts, providing a blueprint for implementing digital mental health interventions in educational settings.

Liverpool et al.'s focus on engagement delves into the modes of delivery, facilitators, and barriers specific to children and young people. By addressing the nuances of user interaction, this source complements the broader understanding of how to design interventions that resonate with the target demographic.

6.2 Common Themes and Patterns

The synthesis of findings from the selected sources reveals consistent themes and patterns that contribute to a nuanced understanding of digital mental health interventions for adolescents. A prevailing theme across the sources is the acknowledgment of the effectiveness of digital mental health interventions. Whether addressing anxiety, depression, or overall psychological well-being, the studies consistently report positive outcomes. This reinforces the potential of digital tools to positively impact adolescent mental health, suggesting that well-designed interventions can contribute to symptom reduction and improved well-being. The importance of tailoring interventions to specific demographics emerges as a critical theme. Lattie et al. (2019) specifically focus on college students, while other studies, while not exclusive, consider age-specific factors. This underscores the significance of understanding the unique needs, preferences, and challenges of different demographic groups to design interventions that resonate with their experiences.

User engagement surfaces as a common thread, with Liverpool et al. (2020) delving into modes of delivery and factors influencing engagement in children and young people. The importance of interactive features, user-friendly interfaces, and age-appropriate content is emphasized. Ensuring that digital interventions are engaging and accessible is vital for sustaining user participation and, consequently, achieving positive mental health outcomes. Despite the positive outcomes reported, the need for ongoing research and evaluation is a recurrent theme.

Das et al. (2016) highlight gaps in current knowledge, and Hollis et al. (2017) stress the importance of rigorous evaluation of digital interventions. Lehtimäki et al. (2021) further contribute by emphasizing the dynamic nature of the field, suggesting that continuous research is necessary to refine interventions and adapt to the evolving technological landscape. The acknowledgment of challenges and barriers represents a sobering theme. Liverpool et al. (2020) explicitly address barriers to engagement, including privacy concerns and technical challenges. This highlights the importance of not only celebrating successes but also systematically addressing obstacles to the widespread adoption and sustained impact of digital mental health interventions.

6.3 Recommendations for research and practice

The amalgamation of evidence from these sources underscores the importance of a tailored, evidence-based approach to digital mental health interventions for adolescents. To maximize effectiveness,

future research should explore the integration of diverse strategies, consider age-specific needs, and address barriers to engagement. Practitioners and policymakers should leverage the positive outcomes observed in these studies while remaining vigilant to the challenges associated with technology-based interventions.

7 CONCLUSION

Demand for digital mental healthcare services has increased due to the increased number of smartphone users worldwide. With the increase in the use of technology, human beings, especially adolescents, have developed severe mental health issues such as anxiety and depression brought about by inadequate communication and total dependency on social apps. In this case, mental healthcare professionals must migrate into digital healthcare provision. The interventions discussed provide avenues for alleviating mental health issues through digital care and therapy. Improving digital mental health interventions may promote healthy relationships and reduce the rising number of ailments in terms of mental health among adolescents.

The thesis revealed that most of the published literature was conducted by different researchers on the efficacy of various digital interventions on sample populations. The overall perception and attitude of mental health nurses and researchers were that the changes brought by technology intervention on mental health would be tremendous. Researchers arrived at possible results on the use of various interventions discussed. This means there is a clear pathway for using various interventions such as video games and chatbots that may be popular as modes of intervention.

In this overview, we have offered a higher-level synthesis of prior systematic evaluations in this domain that encompass a variety of digital health interventions and projected health effects. These reviews have been conducted in the past. Although this is an essential step in determining the value of digital interventions in general, it does present several difficulties in terms of interpretation (for example, variations in study settings, methods, and comparators, along with inconsistencies in reporting both within and across the reviews, including the level of description of primary studies and the findings). Nevertheless, the existence of these variations draws attention to the critical requirement for more systematic techniques for testing and reporting on effectiveness across research. Because of the inclusion criteria for several of the studies examined here, there is a possibility that some of the primary studies were repeated across the evaluations. In addition, because the field of digital interventions is rapidly evolving, many examined interventions may be either obsolete or no longer in use. However, due to the heterogeneity throughout research, it is necessary to conduct this analysis to detect any concurrent effects that manifest themselves, despite the fact that specific tests tend to vary from study to study and review to review.

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