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The Dual Lens Impact of AI on Youth Mental Health and Perception

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ABSTRACT

This study investigates the relationship between the development of Artificial Intelligence (AI) and its impact on youth mental health. The primary goal is to determine whether AI has a positive or negative influence on young people. Data on AI tool usage and mental health status were gathered through standardized secondary sources. The findings reveal a significant connection between time spent using AI tools and mental health issues, with teenagers reporting symptoms such as anxiety, depression, cyberbullying, and reduced social skills. The study highlights both positive and negative effects of AI on youth mental health.

Keywords: *Artificial Intelligence, Mental health, Perception, Youth.*

1. INTRODUCTION

The findings reveal a significant connection between time spent using AI tools and mental health issues, with teenagers reporting symptoms such as anxiety, depression, cyberbullying, and reduced social skills. The study highlights both positive and negative effects of AI on youth mental health.

In 2019, 1 in every 8 people, or 970 million people around the world were living with a mental disorder, with anxiety and depressive disorders the most common. In 2020, the number of people living with anxiety and depressive disorders rose significantly because of the COVID-19 pandemic. Additionally, the prevalence of mental health and addiction disorders exhibits a nearly equal distribution across genders, emphasizing the widespread nature of the issue.

The use of AI in mental health aims to support responsive and sustainable interventions against the global challenge posed by mental health disorders. Some issues common to the mental health industry are provider shortages, inefficient diagnoses and treatments.

The AI industry sees a market in healthcare especially in mental health applications whose growth has been phenomenal – $5 billion in 2020 to a forecasted $45 billion by 2026.

AI stands for artificial intelligence, a term used to explain the ability of computers or machines to complete tasks completely autonomously like reasoning and decision making. Artificial intelligence, while having existed for a long time in computer programs, has now found application in numerous other goods and services. For instance, some digital cameras use artificial intelligence to tell what objects are in a picture. In addition, experts anticipate even more innovative developments of artificial intelligence in the near future like smart electric grids.

The rapid proliferation of AI is changing societies in various ways – including mental health care. AI technologies such as Messenger's algorithms and AI-driven digital mental health apps are changing how young people understand and relate with the world and their mental health problems. At the same time, AI has the potential to transform mental health care for the better by providing alternative resources and means for interventions. There are also risks with AI adoption, particularly in the context of adolescents

As AI continues to progress, both it is essential to understand that how is this technology going to affect the youth mental health in the future and what strategy will maximize its benefits and minimize the potential harm. AI is being used in numerous ways to support mental health care.

For instance, some digital cameras use artificial intelligence software to understand the objects in an image. Some other upcoming applications that experts expect to see utilize artificial intelligence include smart electric grids. With the rush for AI into daily life, numerous sectors in society, including mental health care, are being transformed. From social media algorithms to digital mental health apps, AI technologies are already profoundly shaping how young people interact with the world — and how they engage with mental health challenges. AI has great promise for transforming mental health care through readily accessible resources and interventions, yet also poses new threats, most notably to youth. The growth of AI is happening at breakneck speed and it is vital to understand both the positive and negative impacts that this technology has on youth mental health and to create interventions that maximize the benefits while limiting the harms.

AI is already being leveraged in a number of different ways to support mental health care. AI-powered tools can help in diagnosing early symptoms of mental conditions-response such as anxiety and depression in the diagnostic area. Machine learning algorithms are capable of analyzing patterns in data including speech patterns, facial expressions and behavioral trends which can assist clinicians in making more accurate and timely diagnoses (Zuckerman, 2022). For the youth, who rarely have the financial stability to seek in-person therapy, AI-driven virtual mental health platforms have increased access to counselling services. Some of these platforms offer cognitive behavioral therapy (CBT) and mindfulness practices, which give users immediate, confidential support available 24 hours a day. Moreover, AI can provide personalized treatment plans tailored to an individual's needs, increasing overall care effectiveness (Nqweniso et.al. 2020).

While the advancements have been promising, the ubiquitous role of AI in youth culture, especially via social media and gaming, raises questions about its effect on mental health. Social media, with its growing use of AI algorithms to determine what content gets displayed to users, and which posts to recommend to which users, has been associated with increased anxiety and depression among young people. Studies have shown that over-consuming social media can lead to inappropriate body image, cyberbullying, and pressure to conform to unattainable ideals of beauty or achievement (Tiggemann & Slater, 2021). This has a greater impact on teenagers, who are more vulnerable to peer pressure and places where they socialize with their peers. These feelings are amplified with the use of social media algorithms that repeatedly show users content that furthers these pressures. In turn, young people face an increase in stress and less confidence, leading to long-term mental health issues.

One of the most worrying things about the way that AI might affect young people is that it may encourage social isolation. Digital technologies provide opportunities for connectivity but can lead to more time spent in front of a screen and less time spent in face-to-face interactions. AI algorithms that power these gaming platforms have been accused of compelling users to keep the game going for extended periods, an activity that has been linked to depression and disturbances in sleep among other outcomes (Morrison, 2022). These games are so immersive in nature that it can lead to overreaching distraction of young ones and they fail to devote their time to physical exercise, real-life social interactions and other forms of mental engagements, which are extremely necessary for emotional health. However, AI also offers a special opportunity to address some of the barriers youth face in accessing mental health care. 4) Stigma — Stigma can be a huge barrier to seeking mental health help, especially for young people who may worry about judgment or discrimination. The stigma associated with mental illness can be a barrier to getting help (Nqweniso et.al. 2020). AI-powered platforms that provide anonymity and privacy, make it easier to access support without the need for in-person interaction (Joubert & Smith, 2020). AI tools can also offer learning materials to build mental health literacy, to enable young people to identify mental health challenges in themselves and in others. AI can be a powerful tool in early prevention through increased education and awareness.

In addition, such AI technologies can be employed to support and track the youth's emotional state in real-time. AI-assisted apps, for instance, can closely monitor the mood and highlight whether certain actions or activities can impact an individual's mental health in a positive or negative manner. These observations can be especially helpful to young people who might not have the words or the ability to describe what they are feeling or why they are worried. With AI's ability to provide recommendations based on user preferences and patterns, AI can suggest healthier coping mechanisms and behaviors,

reducing the risk of developing severe mental health conditions.

Although it is evident that AI has the potential to improve mental health care, ethical and social implications relevant to the widespread application of AI should be carefully considered. AI-enhanced platforms should be approached intentionally, with youth safety and well-being in mind; there are ways of utilizing the technology that promote healthy engagement rather than exacerbate existing problems. This includes device applications (apps) that use AI algorithms to provide mental health support, which need to be evidence-based and safe whilst being available to everyone no matter their socio-economic background. In addition, there is a need for continued research on the long-term impact of AI on mental health among young people — namely, the overuse of AI-powered social media and gaming platforms.

OBJECTIVES OF THE STUDY:

1. To study the impact study of Artificial Intelligence on youth mental health.
2. To know the perception and thoughts of youth about Artificial Intelligence.

2. LITERATURE REVIEWS

Thakkar, A. et al. (2024) focus on Impact of Artificial Intelligence in Youth: An Insightful Analysis. Reference: Artificial Intelligence from the Turing Test to Digital Medicine: A Didactic Study. The integration of these two fields has far-reaching implications for improving numerous aspects of mental health conditions; from research hypotheses and diagnostics to treatment options and clinical procedures. The findings of this study, however, is not without limitations. However, the generalizability of the findings is limited because the scope of the review may not capture the full extent of AI's influence on mental health.

Dhariwal, N.et al. (2024) emphasizes on AI driven Approach for Classification of Mental health disorders. Particularly, the findings indicate that pollution and addiction contribute to the worsening state of adult mental health; thus, preventive measures should be taken to mitigate these significant health issues. The result of the work will contribute to the understanding of the severe consequences of the choices they make regarding the use of alcohol and cigarettes on their mental health. Future scopes involve creation of a dataset that encompasses all walks of life and all demographics thereby training a more generalized AI model that predicts mental health occurrence. Such research will surely assist physicians and else, mental health professionals to foresee the onset of mental illness, particularly for an event that is genuinely natural disaster or adversity, in which lifestyles could undergo changes as a result of change of ecosystem. But experiments need to be tested on different datasets of the similar category to come to a decisively medical conclusion.

Omarov, B. et al. (2023) explore, Artificial Intelligence enabled chatbots in mental health. The primary issues of the literature review focus on the definition of technologies aimed at the development of chatbots for mental health, determination of mental disorders treatable with chatbot apps, as well as the description of artificial intelligence methods, used in chatbot applications, and the determination of ethical issues during the development of chatbot apps for mental health. The study concludes that the two main benefits of utilizing a digital instrument are quantifying and accounting for learning approaches variation. Still, there's so much we don't know about using digital learning techniques in each unique case. The psychological health app market revolves around AI-based personalization or how to make learning in the app adjustable to every patient’s individual mental health state.

Artificial Intelligence in Mental Healthcare:

Jin, K. W. et.al. (2023) analyse that mental healthcare is undergoing a much-needed disruption via AI, but progress has been hindered by insufficient large, high-quality heterogenous data sets, concludes the study. Digital health technologies are a promising addition to the computational and clinical toolkit, scalable to increase access to care and streamline public health surveillance. But as technologies advance, many questions linger about the ethics of implementing AI in the clinic. As AI becomes more embedded in mental healthcare, researchers, clinicians and regulators must continue to work closely to ensure patient protection remains paramount.

Berube, C. et.al (2020) Investigate tailored Technology Choices for Artificial Intelligence-Based Conversational Agents for Chronic Conditions. The literature on AI-based conversational agents for chronic conditions is sparse, with the majority of evidence coming from quasi-experimental studies of chatbots in the prototype phase that incorporate natural language processing and support multimodal user input. Future research may benefit from comparing AI-based conversational agents with evidence-based evaluation and comparing between chronic health conditions. In addition to improving comparability, the quality of the chatbots developed for individual chronic conditions as well as their subsequent effect on the target patients could be improved by more structured development and homogenous evaluation processes.

Alsayed, S. et.al. (2024) research on impact of Artificial Intelligence chatbots on student well-being and mental health. This study specifically analyses the core psychological disorders and mental health problems that can be affected with conversational agents and chatbots taking place in education institutions like schools and universities. The outcomes showed that anxiety and depression are the primary clinical psychological disorders that conversational agents and chatbots can

affect. Nonetheless, the review covers several instances of universities and schools, highlighting the role of chatbots in educational and advising processes. Despite multiple studies conducted to determine the effectiveness of various motivations and engagements in learning with chatbots (Kuhail et al., 2023), few studies have focused on the current technological developments that chatbots possess in handling academic stress and other forms of psychological disorders in high school students.

RESEARCH METHODOLOGY:

Descriptive research design will be used for this study regarding the effect of artificial intelligence on youth accrete mental health. Choosing a descriptive approach is appropriate given that this will allow the researcher to collate and interpret current literature about how AI applications (for example, chatbots, mental health apps, and virtual therapy) affect mental health outcomes, perceptions, and behaviours in young people. The anterior data and inferior data have been aggregated to achieve the goals of the study. Here are the methods used for the study:

DATA COLLECTION METHOD:

This will be a secondary data analysis study based on existing literature, databases, reports, and journal articles. Key sources of secondary data will Includes, Government and Institutional reports: Data and analysis from government health departments, World Health Organizations (WHO), and the National Institute of mental health.

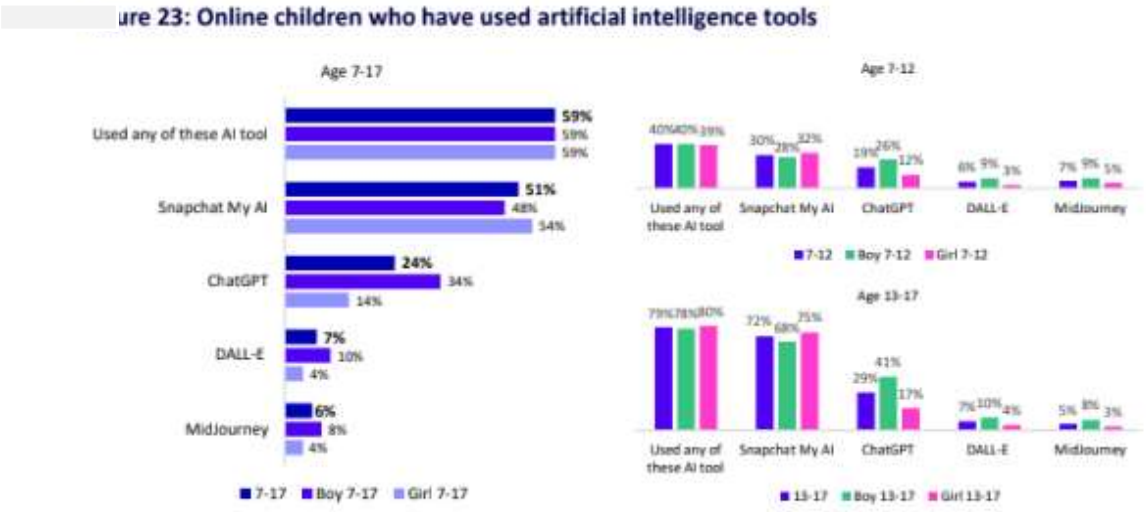
LIMITATIONS OF THE STUDY:

The study is limited to secondary data, which might lack detailed insights into youth perceptions and personal experiences.

Since the data sources are aggregated from multiple studies, generalizing findings to all youth populations may not be fully accurate.

Data Analysis and Interpretation:

Data of usage of various AI tools by youth:



Source: CHILDWISE summer omnibus 2023. Services used in the past six months: Fieldwork conducted June-July 2023.

This figure illustrates the usage of artificial intelligence tools, presented by the age/gender of the respondents aged 7–17 years revealed large differences. Collectively, 59% of children indicated usage of one or more AI Tool, with older children (13–17 years) using at a greater intensity (79%) than younger children (7–12 years) at 40%. Snapchat My AI (51%) is the most popular tool for all groups, but girls rely on it the most, with 75% of girls aged 13–17 versus 68% measurement among boys. Conversely, ChatGPT has significant usage, and is appealing particularly to older boys (41%); younger children and girls report significantly less use of this tool.

Usage of AI tools like DALL·E and Mid Journey continue to be low, at 3–10%, with most users being older boys. "Snapchat My AI, a social media-integrated AI tool that appeals to girls, is doing better than ChatGPT, an AI tool focused on productivity that is largely used by boys, study authors argue, according to the data. These trends suggest that teenagers, particularly older children, are the primary adopters of AI technologies, with usage patterns influenced by both age and gender.

3. MENTAL DISORDERS IN YOUTH

However, psychiatric journaling is a complex disorder of nervous system distinguished by a behavioral or psychological pattern leading to considerable distress and impaired personal functioning. These include, but are not limited to, anxiety, depression, substance use disorders, schizophrenia, eating disorders, bipolar disorder and post-traumatic stress disorder. Mental health disorders make up an important part of the global burden of disease. 970 million people worldwide were living with a mental health disorder in 2017, accounting for about 13% of the global population. Since its initial discovery, mental health conditions have doubled globally and currently account for an average of 1 in 5 years lived with disability. The mortality rate of those individuals with mental disorders ranges up to 64.6% of the average population having lost an average median life expectancy of 10.1 years. Mental health disorders are responsible for eight million deaths each ear, or 14.3% of global deaths. Mental illness particularly plagues younger people. According to the WHO some 20% of the world's children and adolescents have a mental health condition, nearly twice the prevalence seen in the general population. The second leading cause of death in 15- to 29-year-olds is suicide caused by mental illness. Yet, worldwide, <2% of total government health expenditure is directed to mental health.

Table shows the data of various mental health disorder among youth

Mental Health Disorder	Possible Causes Related to AI	Demographics Affected	Prevalence Estimates	Associated Factors
Anxiety	Social media algorithms promoting comparison	Adolescents, young adults	~25% among teens	Cyberbullying, FOMO, unrealistic expectations
Depression	Negative online interactions and isolation	Adolescents	~13% among teens	Loneliness, excessive screen time
Low Self-Esteem	Exposure to curated, idealized content	Adolescents, young adults	~20% among teens	Body image issues, social comparison
Internet Addiction	AI-driven engagement features (e.g., gaming, apps)	Adolescents, young adults	~8% among teens	Impaired social relationships
Sleep Disorders	Increased screen time, blue light exposure	Adolescents	~15% among teens	Disrupted sleep patterns
Attention Disorders	Information overload and multitasking demands	Adolescents, young adults	~10% among teens	Digital distraction, reduced attention span

4. RECOMMENDATIONS AND SUGGESTIONS

There is a need to sensitize parents, teachers, and mental health professionals regarding the potential outcomes of AI on youth mental health. Approaches need to foster a balance between screen use and social interactions, develop methods for spotting AI-induced stress, and educate on using AI responsibly. They also recommend expanding access to AI-powered mental health services, such as virtual counselling and therapy. Privacy and security guidelines must be established and future research should look at longer-term effects and involve youth input to create safer and more supportive AI tools.

5. CONCLUSION

AI's effect on youths is substantial, presenting exciting opportunities as well as challenges. Young folks will be able to engage in their future by being better able to shape their learning experience, explore various careers, and more through the potential of AI. But closely behind in importance are Ethical considerations, The role of AI in social media, and Adapting to a changing labour market. If teens think thoughtfully about these opportunities and challenges, they may flourish in the digital age and get the most out of AI.

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